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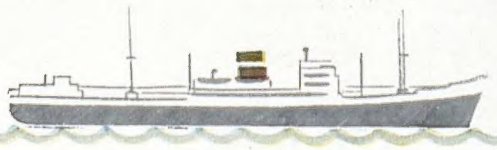
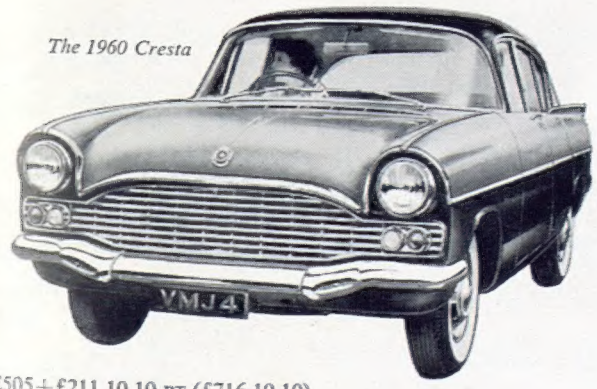


Original of the map, dated 1614, *is In the Library of Congress, U.S.A. This reproduction is made from a copy dated* 1616 *in the Map Room of the British Museum.*

Marvellous new cars... these 1960 Vauxhalls!

The 1960 Victor de Luxe



The 1960 Cresta

Victor £505+£211.10.10 PT (£716.10.10)
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Nip in and out of traffic. Purr along at speed on the motorway. Corner with a surprising new ease. Every mile will increase your respect for its road-holding, its performance, its comfort and its *safety*.

And if you need a second opinion, note these extracts from a 'Sporting Motorist' road test report by Roy Salvadori: 'I find it difficult not to sound too glowing . . . the outstanding medium-sized saloon in the low price group . . . road manners impeccable . . . handles easily and safely . . .'

Why not ring your Vauxhall dealer? Let him show you the new colours and the new upholstery materials. Let him arrange a trial run today. You'll say it yourself when you're out on the road—'Marvellous car this 1960 Victor'. It certainly is.

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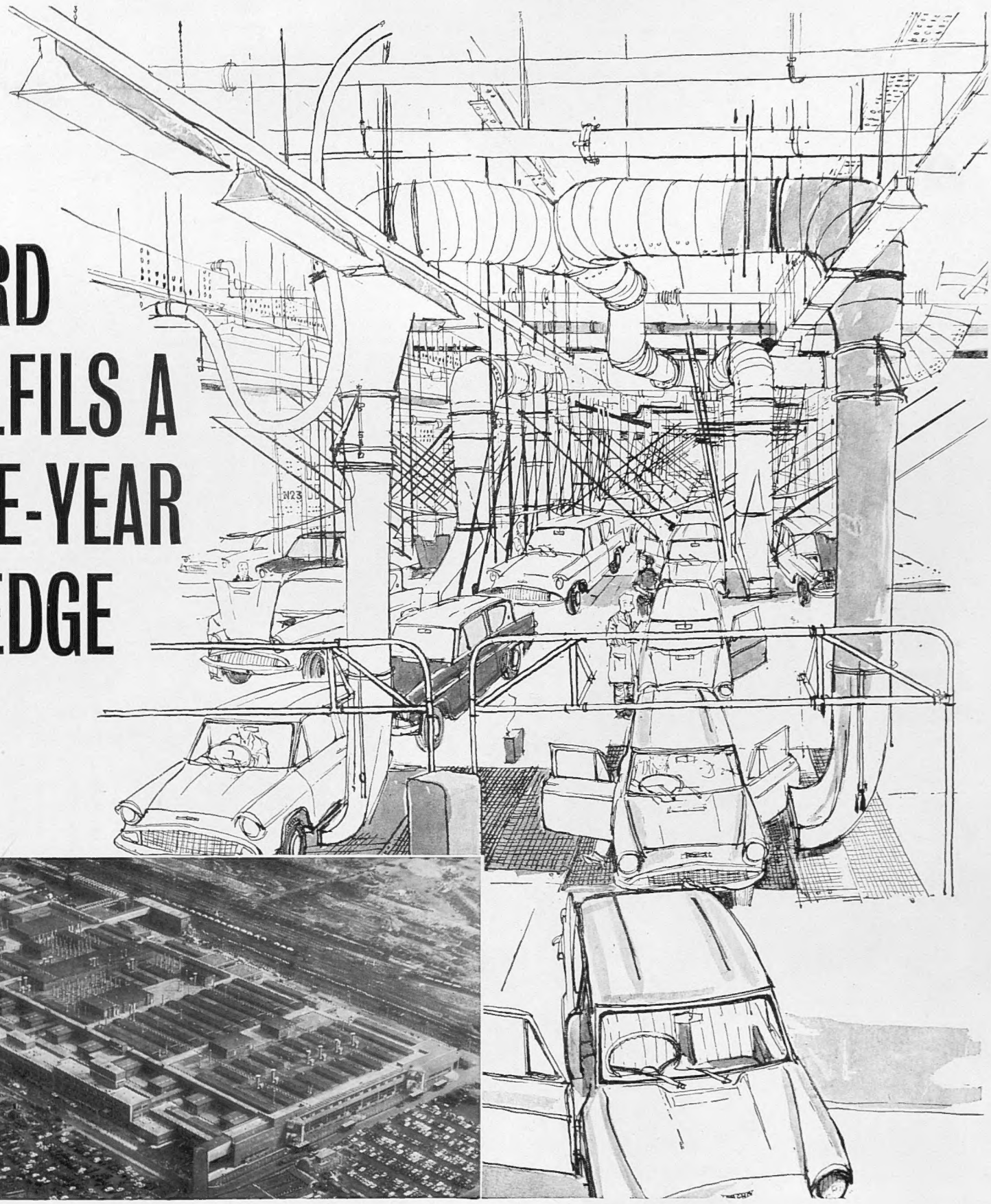
FORD FULFILS A FIVE-YEAR PLEDGE



With the completion of its new Paint, Trim and Assembly Building at Dagenham, Ford fulfils a five-year-old pledge. Well over £65,000,000 have been spent on the expansion programme launched by the Company in 1954—and millions more will be spent in the next few years. This latest plant, which alone cost over £10,000,000, is the most modern of its kind in the world. Completed earlier, and already at work, are the new Parts Depot at Aveley, the new Basildon Machine Shop, the new Foundry and Body Press Shop at Dagenham. These mighty cash contributions to Britain's future are Ford's pledge, translated into steel and concrete, that British skills shall continue to lead the world in providing quality vehicles at the lowest possible cost.

FORD OF DAGENHAM KEEPS FAITH WITH TOMORROW

The Revolution nobody noticed

A REVOLUTION that nobody noticed has been happening in our own homes. It is turning us all into people who depend on steel.

Steel for consumer goods was rare in grandmother's day. The great steel invasion really began in full force in the early 1920's. How far has it gone? How much have we come to *rely* on steel in our daily lives?

Let's look into a modern home and find out.

HOW MUCH STEEL?

Ask a typical housewife how much steel she handles in an ordinary day.

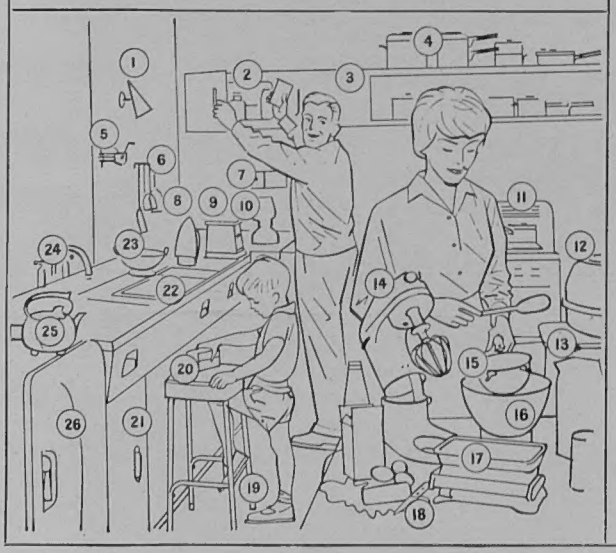
"Steel?" she'll probably say, "well, there's some in the car I suppose."

That's about as far as most people get. Actually for going about the daily business of living – cooking, cleaning, child-coping, travelling, working, playing – she and her family are *using steel almost all the time.*

The picture above gives some idea of the amount of steel in just *one room* of a modern home. The score: 26 different kinds of article, useful, pleasant, time-saving, labour-saving – even indispensable. All of them made wholly or partly of steel. And you can't see the boiler, the gas-poker, the vacuum cleaner or the electric polisher.

Nowadays we'd be lost without our many servants made of steel. So it's a good thing for us all that British steel is as cheap as it is versatile. The Steel Industry is working out new cost-cutting methods all the time – with the result that steel prices have not risen at anything like the rate of many of the things we have to pay for.

All these are made wholly or partly of steel



1. Wall lamp
2. Cans
3. Cupboard
4. Saucepans
5. Can opener
6. Kitchen implements
7. Switches
8. Electric iron
9. Toaster
10. Coffee percolator
11. Cooker
12. Spin dryer
13. Washing machine
14. Mixer
15. Sieve
16. Mixing bowl
17. Scales
18. Kitchen knife
19. Stool
20. Toy bus
21. Kitchen unit
22. Sink
23. Colander
24. Taps
25. Electric kettle
26. Refrigerator

THE BRITISH IRON AND STEEL FEDERATION

Volume CCXXXIX No. 3102

The SPHERE, London, November 14, 1959

The SPHERE

with which is incorporated THE GRAPHIC

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REMEMBRANCE SUNDAY 1959—AT THE CENOTAPH IN LONDON DURING THE LAYING OF WREATHS: Prince Philip stands to attention with the Duke of Gloucester behind him. On the far side in the front row are, from right: Mr. Macmillan; Mr. Walter Nash, the Prime Minister of New Zealand; Mr. Gaitskell; Mr. Grimond; The Lord Chancellor; The Speaker; Mr. Butler; Mr. Selwyn Lloyd; Lord Home; Lord Hailsham and Mr. Sandys. On the balcony above them are Princess Margaret and others of the Royal Family.

The Queen was unable to be present at the Remembrance Sunday ceremony at the Cenotaph, in Whitehall, last Sunday. She was spending the week-end at Windsor and, with Princess Anne, was present at a service in the Royal Chapel, Windsor Great Park. On Her Majesty's behalf the first wreath was laid at the Cenotaph by Prince Philip. He was followed by the Duke of Gloucester, and a wreath was also laid on behalf of the Queen Mother, who was attending the Remembrance ceremony at the Stone of Remembrance in Edinburgh. Among the political leaders at the Whitehall service was Mr. Walter Nash, the Prime Minister of New Zealand, who laid his wreath after Mr. Macmillan. The "Last Post" was sounded by trumpeters of the Royal Air Force and the "Reveille" by the bugles of men of the Royal Marines. The Bishop of London, Dr. Montgomery Campbell, conducted the traditional service. According to many reports, the crowds in Whitehall were probably smaller than in previous years. Possibly because of this the Two Minutes' Silence, in honour of the dead of the two World Wars, was more marked than usual in central London.

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THE CENTENARY ANNIVERSARY OF THE ROYAL NAVAL RESERVE: The Duke of Edinburgh sits to the left of the centre of the top table in the Painted Hall of the Royal Naval College, Greenwich. With the Duke of Gloucester and some 250 officers of the Royal Naval Reserve, including eight officers of the Women's Royal Naval Reserve, he was attending an anniversary dinner to mark the centenary of the formation of the R.N.R. On the following day the Duke, representing the Queen, attended a Thanksgiving Service at St. Paul's Cathedral. The Duchess of Kent, Chief Commandant of the Women's Royal Naval Service, and the Duke and Duchess of Gloucester were also present.

A London Newsletter

195-198, STRAND, W.C.2.

Nye Fawkes—The House of Commons will remember the 3rd of November and Nye Fawkes' powder and shot which rocked that dreary building where dull paper speeches are too often badly spelled out. Mr. Bevan was himself again the House's orator No. 1. Tub-thumping, no doubt, but brilliant knockabout. He was frank about Labour's failure to cure our industrial evils, but he spread himself with the *tu quoque*. He slashed the Press, he belaboured Lord Hailsham and kept some sharp barbs for chaffing the Premier. There may not have been much of constructive ideas in his wild Philippic, but the long-suffering public, fed (as he said) by distorted or truncated reports of Parliamentary debates, might welcome TV reporting, if it could be assured of an occasional rocket to enliven the damp squibs, even if oratorical rockets introduce more colour than light, more cheers than nods of approval.

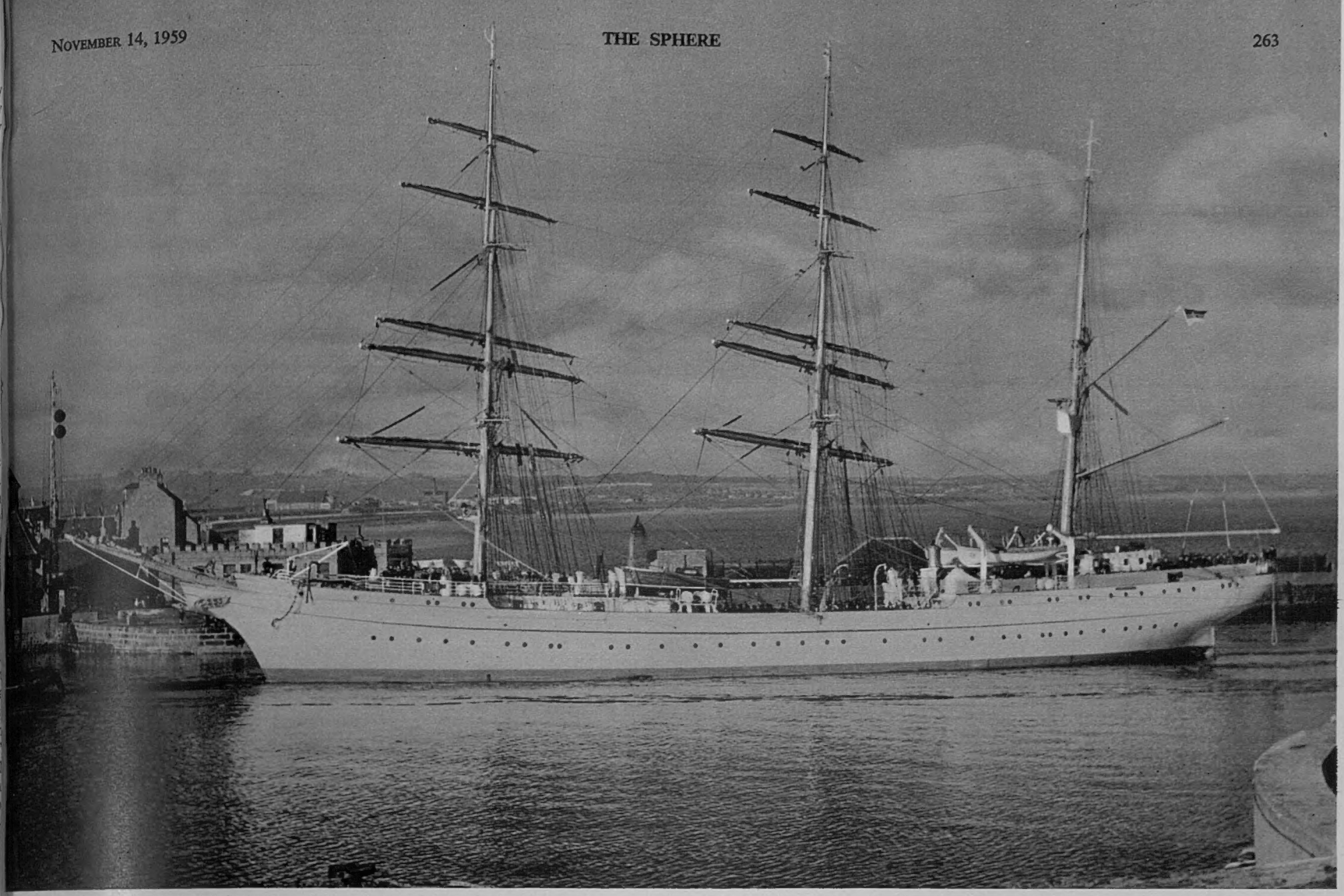
Gambling—The Easy Way Out—The laws on gaming go back to Methuselah. For generations they have been flouted and ridiculed, and in recent years our over-worked police have been quite unable to carry out their duties of enforcement. Street betting, gaming saloons, village-fete tombolas, innocent or fraudulent, all these matters our ancestors sought to check as national evils, and now at last the old laws are to be swept away and replaced on a new conception of freedom. Everyone may go to the Devil in his own way. Freedom requires it. You need merely obey "some simple rules." The people who enable you to throw your money away must not cheat you, and your sweet old vicar must only encourage you to gamble in a small way and for a virtuous cause. Betting shops will be licensed and they will "clean up the streets" and relieve police headaches, and so on and so forth. One point occurs to me: I suppose our ancestors, as they framed one by one these "antiquated" laws, saw gaming and gambling as a national evil. In our generation, our Government abandons that principle and seeks the easiest way out. It calls it being realistic and in tune with modern (that is, wiser) thought. It is much the same with homosexuality, which gives our police a lot of trouble. Our ancestors thought such practices a national evil. Modern thought seeks the easiest way out. It finds that gambling and homosexuality are, after all, quite reasonable and quite natural. It seeks the easiest way out for the police and for the afflicted weaker brethren. Perhaps the Church is aware of this tendency to sacrifice morality to expediency and has its private doubts. That it *is* such a sacrifice of virtue to expediency on the part of Governments is seldom acknowledged, and the sacrifice is celebrated as a tardy tribute to, and acknowledgement of, a wiser age. Mr. Butler, that admirable and virtuous Minister, never showed up more virtuous and full of wisdom than in explaining his plans.

A Bright Idea for Nationalised Industries—A nationalised industry is a part of the nation's vital concerns, and the nation's vital concerns are the prime responsibility of its Government. Why else do we have a Government? A Government, of course, and the departments they control, cost a lot in salaries and overheads, and when the Ministers and permanent staffs satisfy us that they are doing their jobs well, we pay up and look pleasant. The nationalised industries of railways and mines have not given us great satisfaction. The boards which have run them hitherto have been costing us about £800,000 in salaries alone, and during their lifetime as directors of nationalised industries, they have been largely exempt in detail from Parliamentary investigation and indeed from Ministerial direction. Hor their boards have run the commercial side of these highly commercial undertakings has been their affair (and the have been touchy about interference). But the metho of running these nationalised industries was the basis o the conception of nationalisation by Socialist Govern ment. It has remained the basis. Now it has occurred to members of the current Parliament that these affair might be better run (and better understood by us) if th boards became more fully Government sub-department of departments under the direct control of the appropria Ministers, who are always answerable to Parliament, even to the extent of Parliamentary questions on minute details Dirty coal and trains, weed-choked canals, reckless strikes all these are matters we should like to air through our M.P.s. And why not? It is a good idea. It is odd that it has not seemed so, years ago. Good reasons exist for the Opposition to co-operate in implementing it. There is a promise that some progress may be made in investigating the possibilities this very Session. First stage will be consultation with the Socialists. It may be also the last. Good ideas and new inventions always seem simple when explained; so simple that one wonders why they took so long to be born.

Youth Leaders—A recent useful debate in the Commons on juvenile delinquency and its cure brought out a good deal of sensible suggestions and opinions from all over the House. The Minister promised that the youth services should invade the schools and concern themselves with the boys and girls in the last year of their school time. This service would afford a good substitute for National Service in the armed forces but it implied the recruitment of a large number of youth leaders, carefully trained and adequately paid on teachers' scales. All admitted that drunkenness as well as criminal delinquency was far too rife among teenagers, but of a total of young people under twenty-one amounting to 4,000,000, the delinquents are still an infinitesimal percentage. There was general agreement that elders and parents share much of the blame for this wave of delinquency. The absence of home discipline, and parents' hazy ideas of what is right and wrong for their own conduct not only obscures moral issues for their children but induces in the grown-ups a cynicism which repels the young from asking for guidance and induces them to "go it alone." Sporting facilities, playgrounds, coaching and full encouragement in finding healthy recreations should be a Government concern, financed by and answerable to a Minister. But not wholly or solely financed by the State. The beneficiaries must co-operate. Lighter suggestions were the encouragement of coarse fishing as a means of banishing other forms of coarseness. Another was that M.P.s set a bad example to youth by lounging and drinking tea. Milk would be better. But there were no titters over the menacing prospect of finding a million more jobs for school-leavers in the very near future. A useful, sympathetic and sensible debate on an aspect of the Queen's Speech.

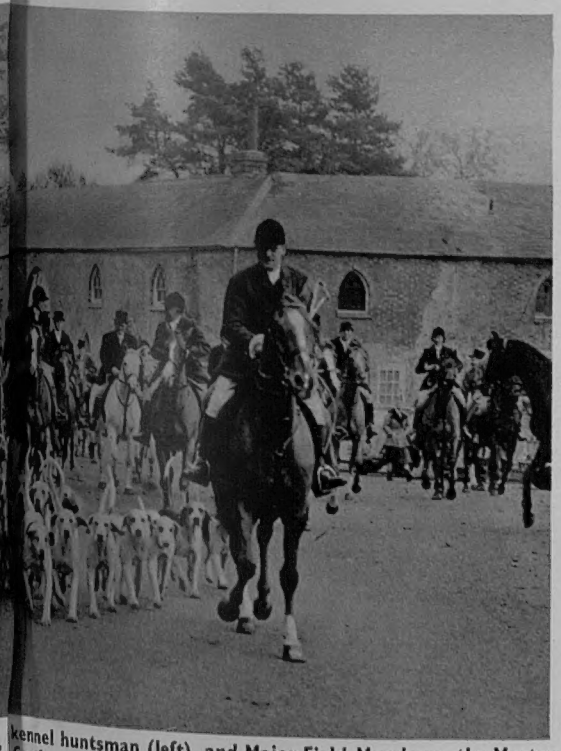
The Branch They Sit On—I never met any species of *homo sapiens*, even in the lowest form at St Dominic's, who, in considering the fabled tale of the monkeys busily sawing through the branch they sat on, held that those monkeys "had something" or were doing a clever stroke of business. Dockside work is hard work and I suppose dockers accept it because they can earn good pay at it. There have been many strikes at the docks in

THE OPENING OF THE HUNTING SEASON: Mr. Tom Cooper, and huntsman, lead the field as it moves off from Eri of the season for the Eridge Hunt. Lying in a large pa



A GERMAN BARQUE AT ABERDEEN: The *Gorch Fock* is towed into the Scottish harbour. On a cruise with cadets of the West German Navy, the sailing ship crossed the North Sea from Kiel. The *Gorch Fock's* three masts can carry 1,700 square yards of canvas. Her auxiliary engines give a speed of 10 knots. She was commissioned last year. Before the war the German Navy had three of this type of ship for training. The old *Gorch Fock* is now in the Russian Navy, while the other two barques are in the U.S. and Mexican Navies.

recent years and they have done an infinity of damage to our economy and probably have not increased the savings or comfort of the dockers. It would not surprise me if many such dockers and their wives are sick of such strikes. I am quite sure that the unions concerned at the top are worried about them and about the loss of their own authority; and if they come to the conclusion that Communist influence is a chief cause and is very active in promoting them, they are probably right. There is a good deal of evidence clearly pointing to the constant disruptive influence of active Communist and Trotskyist agents (who often disagree on policy) who are not all residents in this country. They come from Europe and from America (where some of them have been excommunicated) to make trouble over here and, if they find many sane dockers whom their arguments fail to impress, they are certain of finding hundreds of hotheads too easily convinced. For in every union there are all too many who believe that, never having had it so good financially, there is no limit to the milk in the cow's udders, and believe, too, with better justification in the present decline of union authority and in the delicacy with which all modern Governments handle the "workers," that they can indeed dictate their own terms, with all the impunity of men who cannot be replaced. Yet their livelihood forever depends on work at the docks and when the bough breaks, the babies will fall. Some of them see it. All too many do not.



kennel huntsman (left), and Major Field-Marsham, the Master Castle, near Tunbridge Wells, Kent. It was the opening meet Eridge Castle is the seat of the Marquis of Abergavenny.

Lord Ilchester—I have happy memories of Lord Ilchester, who died last week at the age of eighty-five, though I cannot claim to have been more than an acquaintance. He was a many-sided man, a scholar and man of letters whose many books on Holland House, and its social, political and literary interests, revealed remarkable knowledge of many periods and great accuracy. He was, besides, a countryman and wise landlord and an all-round sportsman. I first met him shooting at Drynachan when Percy Chubb leased the Cawdor Moors. He was a fine shot. I remember that he would never ride a pony up the hill and always began the long days of grouse shooting by plunging into the Findhorn and wading across. He took us round the Abbotsbury Gardens and the Swannery once or twice and revealed other aspects of his knowledge in those wonderful reserves. We exchanged ideas and information on the books we wrote, and he gave me copies of some of his own. At Melbury, he and Lady Ilchester were the most delightful hosts and I have vivid memories of her racy and always kindly talk in a deep voice as she fed the wildfowl beside the lake and led us to church on Sundays. He was Trustee of the British Museum and well fitted to be Chairman of the National Portrait Gallery. He also took a deep interest in the London Library. Lady Ilchester died in 1956 and he went to live in London, in Montagu Square, handing over the Dorset and Somerset estates to his elder son and assigning his interests in the trusts which controlled the London property round Holland House and the country properties. I recall that he accepted the fate of Holland House—the bombing and its subsequent disposal—with philosophy. Much as he loved it—he was a magnificent guide and it was an experience never to be forgotten to be taken round that glorious house by him—he realised that its days as a private London palace were numbered even after World War I.

Killing by Kindness?—International sport is to-day judged to be of supreme importance. Victory over our rival nations in this sport or game or in that must be achieved *conte que conte* and all is fair in world wars to obtain it. Of course, the enemy cannot direct the winds or harness Nature to his rival's detriment, and it was mere bad luck that our Ryder Cup team were tossed and bruised for two days during their Atlantic crossing in the *Queen Elizabeth*. Worse luck still dogged their air journey to California, for the last leg of it was a terrifying experience and left them shaken. And there the enemy found a means of driving home that chance advantage with the secret and fearful weapon of hospitality. Our men were drowned in cocktails, fuddled with champagne, deafened with after-dinner speeches and stupefied with introductions to "mayors and recorders." Nevertheless, we have been assured, the worst the "enemy" could do in their unexampled hospitality, could not disrupt our happy band of pilgrim-brothers. They are all young enough, and had time enough still, to recover from hangovers, and the result of the contest could be no more than a mild excuse for failure or an added laurel in victory. Still, the home side has manifold advantages in such contests as these.

Advice to the Stage-struck—Don't—The Central Youth Employment Executive—that invaluable body—has issued a warning to aspirants for a stage career. The entertainment profession to-day is dangerously overcrowded, fiercely competitive, riddled with disappointment. (Pamphlet 98 ; 1s.) The trouble is that every stage-struck juvenile *is* unalterably convinced of vocation and sure that he or she can be happy in no other profession. In that confidence, they take the risks which are real and the handicaps which are obvious. Success depends as much on chance as on genius. It 's a night-watchman's job which rules out normal social life and friendships. And, worst of all, the best you can offer may not please the public taste of your day. Better to earn while you learn as a journalist (which apparently needs no experience or tiresome training), or lay bricks (which does, but is rewarding, more rewarding than an understudy part in provincial repertory), or write your memoirs or convince the art critics that your paintings "have something" and all the potential investment-value of an early Renoir. The gallery and the pit are harsher critics than the reading public and more self-assured and shrewder than the art critics. Don't go on the stage, Davy and Dolly. The pools will bring you a fortune more certainly. And you can always stand for Parliament as a last resort.

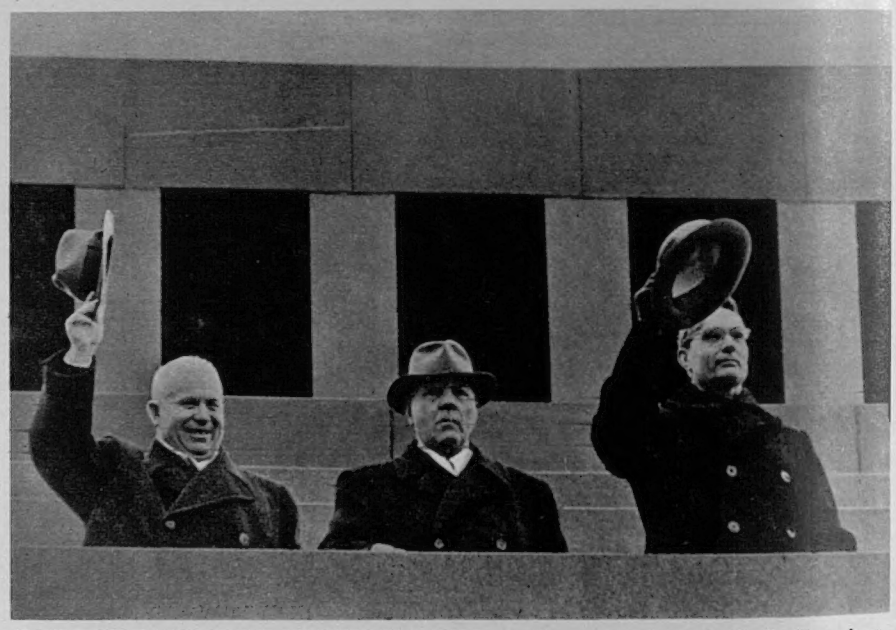
Ghost Roads—Mr. Marples was clearly a little nervous about his new toy when he had spent some minutes watching it at work on the Birmingham stretch. He was appalled by the bad driving and the reckless speed of the first pioneers. Well, if loaded coaches can beat the express trains at steady speeds, we must excuse young bloods in their new scarlet sports cars if, by all means, they must show they can do much better. Already, the reporters tell us, old A.5 has lost half its traffic, and every weekday seems like a Sunday. The inhabitants rejoice and the old patrons already call it a ghost road. I rather hope the local authorities will keep the poor old thing in fair repair. It may be a ghost road but there will be a legion of ghosts on the new one, if my TV peep is a fair guide, until every newcomer to the new road has satisfied his enthusiasm and becomes satisfied with a cruising speed of no more than 65 m.p.h.

THE OLD STAGER

IN THE RED SQUARE IN THE RUSSIAN CAPITAL: Workers carrying banners and flags are massed to march past the Lenin-Stalin Mausoleum (towards right background) on the roof of which Mr. Khrushchev and other Soviet notables are taking the salute. The parade to mark the forty-second anniversary of the Russian Revolution was notable for its absence of demonstrations of Russian military power. Armoured units took only seven minutes to pass through the Red Square and there were no new types of tanks, cannon or vehicles on view. The main accent was on Russia's scientific achievements. One of the show-pieces of the parade was a huge model of the moon with the Lunik going round it. Another feature was a balloon model of a moon rocket which was released in the Red Square. Politics and science were combined in a model of the atomic ice-breaker *Lenin* "breaking the ice of the cold war." As is customary, an Order of the Day was issued by the Soviet Defence Minister, Marshal Malinovsky. In it he referred to the need "for preparedness against the forces of Imperialism," but he also paid tribute to Mr. Khrushchev's contribution to peace in his visit to America. Huge crowds celebrated the anniversary, which is one of the main Russian annual holidays, in a mood of marked relaxation.

ACCENT ON SCIENCE IN MOSCOW PARADE

Celebrations of the Anniversary of the Russian Revolution



TAKING THE SALUTE AT THE ANNIVERSARY PARADE: On the roof of the Lenin-Stalin Mausoleum, Marshal Voroshilov, the President of the Soviet Union, is flanked by Mr. Khrushchev and Mr. Suslov, a member of the Presidium of the Russian Communist Party's Central Committee.

A DISPLAY OF THE FLAGS OF THE SOVIET UNION: Mounted on platforms on motor-tricycles, girls wearing their national costumes carry the colours of the fifteen constituent republics which together form the Union of Soviet Socialist Republics.

TROOPS OF THE MOSCOW GARRISON: Infantry march through the Red Square watched by a portrait of Lenin. On the evening of the day of the parade, Mr. Khrushchev, at a reception in the Kremlin, spoke of the improved prospects for world peace in recent months.

FOG ON THE M.1: From an Automobile Association spotter plane the thick clouds of fog can be seen moving southwards along the London-Birmingham motorway on Friday of last week. Visibility was almost nil at the north end of the M.1. Further south, visibility in patches was 20 yards, and on the southern section of the motorway, it was 15 yards near St. Albans. After crashes in the morning, in which two lorry-drivers were killed and at least four people injured, police warned drivers to go slowly. Altogether there were four crashes on the motorway in the fog. The M.1 was opened on Monday of last week by Mr. Marples, the Minister of Transport, who emphasized the need for "prudence, skill and care." He expressed concern on the first day at the speeds at which vehicles were driven and at drivers' ignorance of the special motorway regulations. There were 100 breakdowns on the first day. Traffic was lighter on the second day but there were more breakdown calls. During the remainder of the first week, however, driving was reported to be better and breakdowns fewer. Friday's were the first fatal accidents on the motorway. (A picture of Mr. Marples on a bridge over the motorway on the opening day is on page 292.)

DANGER ON THE MOTORWAY

Fog Causes the First Fatal Accidents on the M.1

THE FIRST FATAL CRASH: *Left*—Gas cylinders in the foreground are part of the load of the crashed lorry. *Right* is the wrecked vehicle on the side of the M.1, near Crick. The accident occurred n thick fog when a breakdown vehicle pulled up to attend to a car which had collided with a vehicle at the side of the road. A lorry crashed into the breakdown vehicle and the lorry-driver was killed. A second lorry, owned by the same firm, ran into the back of the first; the driver of this vehicle was also killed.

STATE VISIT TO ROME

Prince Rainier and Princess Grace of Monaco in Italy

ARRIVAL AT ROME: Prince Rainier and Princess Grace of Monaco smile on reaching the Italian capital at the beginning of their short State visit as the guests of President Gronchi. They were met at the airport by Signor Pella, the Italian Foreign Minister. During the course of their stay in Rome, Prince Rainier and Princess Grace were received in audience by the Pope at the Vatican. At the conclusion of their State visit last week, the Prince and Princess planned to remain in Italy for a short time. Previous to their journey to Italy, they paid a short official visit to Paris, with their two children, Princess Caroline and Prince Charles. Currently, Rome is entering a busy diplomatic period, as preparations for President Eisenhower's visit are set in train. It was announced that President Gronchi would go to Moscow early in the New Year. It is likely this will give him the distinction of being the first Western Head of State to visit Russia since the end of the Second World War.

DURING THE STATE VISIT: At the Quirinale, in Rome, are, from left, President Gronchi, Signora Gronchi, Princess Grace and Prince Rainier III. A reception was held in honour of the Royal Monégasque couple at the Presidential Palace. During their short visit, Prince Rainier and Princess Grace were shown the arena and grandstands being erected for the Olympic Games.

PAYING HOMAGE: Prince Rainier stands to attention in front of the War Memorial near the Capitoline Hill, in Rome. He laid a wreath before the tomb of Italy's Unknown Soldier.

CEREMONY ON THE CAPITOL: The Mayor of Rome, Signor Urbano Cioccetti, presents a small model of a she-wolf to Prince Rainier. Princess Grace was presented with a book. The she-wolf, as the symbol of the Italian capital, dates from the founding of Rome. The Royal couple undertook a busy programme of engagements during the visit.

World Affairs

THE LONG ROAD TO THE SUMMIT

By JOHN CONNELL

WILL historians in future look back on this as a year of profoundly significant change in international relations, a year as momentous in its own way as 1919 or 1939? I myself, as I have ventured to record here more than once in recent weeks, have come to believe that we are in, or have just crossed the threshold of, a new epoch. Many of the old, familiar problems and issues, with which (it seems to me) I have grown up, with which I lived alongside decade after decade, have undergone a rapid and radical transformation. The wolves, bears and fascist hyenas which have pranced ferociously through the earlier phases of this protracted pantomime have now been changed into beautiful, lissom damsels who, wrapped in the bright, diaphanous folds of the flags of all nations, march into the strong sunlight, singing in unison a new and quite inoffensive version of the "Internationale." I only hope that I shall not soon have to reach for my hat and coat and stumble out into the fog and slush of a winter night.

I trust that I do not give an impression of cynically mocking the arrival of many hopeful signs and portents on the international scene, especially in Europe and in the relations between the Atlantic Alliance and the Soviet Union. These signs fill me with awe and admiration; and, considerably to my own surprise, I have achieved a willing suspension of disbelief. This, after all, is a drama in which every one of us is involved; the chance it may have a happy ending ought to arouse only excitement and gratitude.

The pattern of diplomatic negotiation (with or without the participation of Communist China) in the last few weeks of this year and the opening months of 1960 is now fairly clear. About twenty-four hours before the announcement that a Western Summit Conference is, by the invitation of General de Gaulle, to be held in Paris between December 19 and Christmas Day, Mr. Khrushchev made a far-ranging and (on the surface, at any rate) statesmanlike and conciliatory speech on foreign affairs to a session of the Supreme Soviet in Moscow.

Mr. Khrushchev's authority over Russian foreign policy appears at present to be unchallengeable; his responsibility for the direction which it takes is paramount. He is willing to negotiate with the West, and he will probably attempt to drive a succession of extremely hard bargains. He is conscious that he negotiates from a position of increasing strength. Competitive co-existence is to him not a formula, but the centre-piece of his not very elaborate, but fairly forceful, political philosophy. Every major Russian industrial, scientific or technological advance—they have not been few in recent years and there are likely to be more—enhances his bargaining power.

But he is also aware, as Stalin before him was never aware, that the capitalist West is by no means the moribund and decadent monster depicted, in horrifying detail, in the Marxist holy books; it, too, is capable of advance and development. His travels abroad and his now numerous meetings with foreign statesmen have broadened his outlook and increased his stature. There can be little doubt that he is anxious to bring the cold war in Europe to an end—on his own terms, of course, as much as possible. He realises, however, that he cannot expect to impose those terms. He must bargain for them as relentlessly as he can. His speech to the Supreme Soviet can therefore be regarded as an able and well-timed manœuvre in the preliminary phases of negotiation.

The year which began with a Russian ultimatum about Berlin ends with Mr. Khrushchev paying well-merited, but none the less startling, compliments to Mr. Macmillan and General de Gaulle, carefully refraining from any wounding criticism of Dr. Adenauer, pleading for an early Summit Conference between East and West, and assuring his hearers (and the world) that though the Soviet Union still favours total disarmament, its ideas are flexible enough to admit the concept of step-by-step disarmament.

Since shortly after this speech the Soviet Union flatly rejected Mr. Selwyn Lloyd's interesting proposal for a joint underground test of nuclear weapons, and then to some degree withdrew that rejection, it is obvious that Russian flexibility, on this particular theme at any rate, has its inner contradictions as well as its limitations. However, this should be no reason for despairing of reaching final agreement. Mr. Khrushchev's propositions must be regarded primarily as a basis for discussion.

If this is granted, then the Western Summit Conference in Paris next month assumes its own especial importance. I myself wish it could have been held sooner, and I wish it could be longer, with thorough preparation before it, and a full and candid thrashing out of major differences between the Western nations while it is in session. Four or five days in the week before Christmas do not seem to me an adequate allocation of time in which to accomplish the considerable and complicated tasks which still need to be performed if the West is to present a united front at the main Summit Conference in the spring.

MR. KHRUSHCHEV IN A CONCILIATORY MOOD: The Russian Prime Minister addresses the Supreme Soviet in Moscow. His speech was generally moderate in tone and was well received in the West. Referring to the Summit, Mr. Khrushchev spoke of "mutual concessions" being necessary for "peaceful co-existence."

But even before the Paris Conference, there is another hardly less critical meeting, that of the North Atlantic Council. For many months past there has been talk about reorganising and reconstituting NATO, talk which latterly has been given a good deal more impetus and relevance by the realisation of the changed economic relationship between the countries of Western Europe and North America.

In a lecture at the Royal United Service Institution earlier this year (it was entitled, rather pointedly, "The Adaptation of NATO to Changing World Conditions") Sir Frank Roberts, the United Kingdom's Permanent Representative on the North Atlantic Council, gave an impressive and succinct account of NATO's real achievement in contemporary terms:

"NATO was the essential political and military shield without which the amazing economic recovery of Western Europe would never have taken place, because there would have been no public confidence and no will to survive and recover. This was all achieved by the essential means—the linking by treaty ties and in peace-time of Western Europe with the economic and military strength of the United States and Canada. Those two countries together provide to-day three-quarters of the military budgets of all fifteen NATO countries. It was not one of the original goals of NATO that Germany should be a member, although the use of German territory was, and is, essential to the deployment of Western defence forces. But it is in fact behind the NATO shield that the whole movement towards the Franco-German reconciliation, the six-Power communities, and the growing unity of Western Europe—whose rivalries have so often led to world wars—that West Germany has not only become prosperous but has become anchored in the Western democratic world."

It is doubtful whether the Northern American nations, in the changed conditions of 1959-60, ought to be asked to bear, or are indeed any longer capable of bearing, the major burden of NATO's costs. The time has come to share the load more equitably. Whatever agreement may be reached on the long-term processes of general disarmament, the need for NATO, in one form or another, is bound to exist for many years to come. All the benefits which it has secured, which are, in fact, the foundation of Western European peace and prosperity to-day, are not to be thrown away.

The redistribution of costs has therefore to be brought about with scrupulous tact, care and fairness; and, as the Americans perfectly well realise, it cannot be allowed to diminish either the general defensive power of NATO or their own sheerly military contribution to that power. But Britain, France and Western Germany may all, in proportion, have to carry a bigger share of the expense, both in conventional and in nuclear armaments, so long as the necessity for either or both is still present.

In spite of the rightly optimistic atmosphere which prevails nowadays, that necessity is still very real. The question of Berlin, after all, has been shelved, not solved. Any real weakening of NATO's defences, either politically or militarily, might tempt the Soviet Union into a return to the aggressive and perilous policies which for the time being have been abandoned.

The first task therefore of the North Atlantic Council, at its forthcoming meeting, must be to consolidate what might be described as the sub-Summit structure of the unity of the Alliance. Thereafter it is at the Western Summit that the work must be completed. A great responsibility rests on those who will assemble in Paris in December—perhaps most of all on General de Gaulle himself. He has striven, with a good deal of success, to make a resurgent France, if not the pivot, at any rate one of the most important arms of the Atlantic Alliance. He has earned the respect and the understanding of France's allies, not least for his notable work in furthering that Franco-German reconciliation to which Sir Frank Roberts referred. He is supremely conscious of his own and his country's responsibilities; he could never be a flabby or a complacent ally; it is of the greatest importance now that he should throw the full weight of his political and moral authority into the effort to sustain and strengthen Western unity.

President Eisenhower is no less conscious of American responsibility. His European visit earlier this year has obviously encouraged him to exert to the full his own formidable resources of diplomatic and persuasive talent. Before he goes to Paris, he is to make an extensive world tour and visit nine capitals, including Delhi, Karachi, and Rabat. The orbit of Western diplomacy is therefore not confined to Europe. This series of Presidential visits is an explicit, unmistakably definite recognition of the most sensitive danger-spots on the perimeter between the Communist and the non-Communist hemispheres.

Mr. Nehru, in his disillusionment, has put on a bold and resolute face against continued Chinese aggression on India's borders. He has contrived hitherto to combine this attitude with renewed protestations of neutralism. But no more than France can India go it alone. The seriousness of the Chinese threat to India is obvious to all—including Mr. Khrushchev. But while Mr. Khrushchev is apparently powerless to restrain his associates in Peking, Mr. Eisenhower has both the right and the power to support and assist India.

A single Summit Conference early next year? I wonder. I tend to think that there must be a series, each of which can, with luck, carry us all a little further on a long, long road.

THE NEWS IN PICTURES

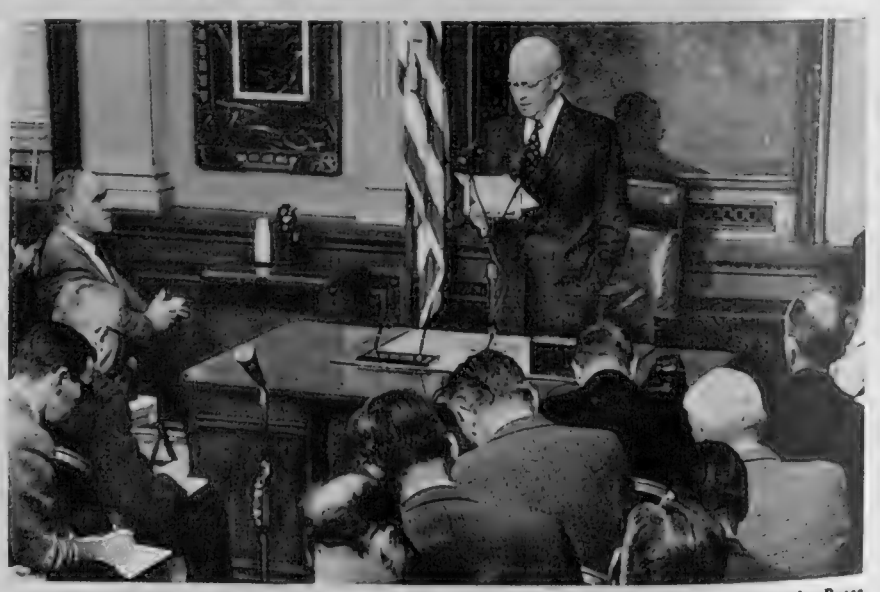
HELICOPTERS FOR THE QUEEN: Two Westland Whirlwinds are airborne over the Westland works at Yeovil, in Somerset, en route to join the Queen's Flight at the R.A.F. station at Benson, Oxfordshire. The helicopters, the first ordered for the Queen, were handed over by Mr. E. C. Wheeldon, managing director of Westland Aircraft, to Wing Commander R. G. Wakeford, Commanding Officer of the Queen's Flight.

THE PRIME MINISTER OF NEW ZEALAND IN LONDON: Outside No. 10, Downing Street, Mr. Nash, accompanied by Mr. Macmillan, smiles and waves to the crowd of sightseers. In Britain for talks with the British Prime Minister, Mr. Nash, at a luncheon given him by the New Zealand Society, paid tribute to the British Government which two years ago helped New Zealand out of financial difficulties. Mr. Nash left Britain last Monday for Jakarta to attend the 21-nation conference on the Colombo Plan.

REVELATIONS ABOUT AMERICAN TELEVISION QUIZ SHOWS: In Washington, Mr. Charles Van Doren, who won about £46,000 on the show, "Twenty-one," hands American reporters copies of the statement he read to the House of Representatives Sub-Committee. He admitted in the statement that he had been coached before each show. On television Mr. Van Doren had soon won national renown. He described how his feelings of remorse had grown until he felt bound to make a public confession. Columbia University, where he held a teaching post, accepted Mr. Van Doren's resignation.

A BOOMING BRITISH INDUSTRY: Rows of Morris Minor 1000 saloons and convertibles, specially manufactured for the export market, are lined up on William Cory's wharf at Erith, Kent, before shipment to Canada and the U.S. The Thames port, between Woolwich and Gravesend, has recently been developed to cope, as an alternative port to London, with the expansion of British car exports. Exports of cars to the U.S. alone in the first nine months of this year increased by 11 per cent. compared with the same period of 1958. THE SPHERE Motoring Correspondent in his article on page 292 gives this year's car production figures.

DEADLOCK IN THE UNITED NATIONS: At a session of the U.N. Assembly in New York, Sir Pierson Dixon (seated second from right), the United Kingdom Permanent Representative at the United Nations, leans forward to talk with Mr. Harold Beeley, of the U.K. delegation. Mr. Cabot Lodge, the United States Permanent Representative, is sitting second from left. The picture was taken last week during one of the many sessions in which the Assembly was reaching deadlock in the voting on whether Turkey or Poland should have the vacant non-permanent seat on the Security Council.



PRESIDENT EISENHOWER ANNOUNCES HIS PLANS FOR A WORLD TOUR: He informs the Press in Washington of his proposed itinerary. Before the "Western Summit" meets in Paris on December 19 Mr. Eisenhower plans to visit Rome, Ankara, Karachi, Kabul, Delhi, Teheran and Athens. He will return to Washington by way of Rabat, in Morocco. No previous American President has made a tour of this scope and it will be the first time an American President has visited any of the peoples of Asia. Mr. Eisenhower will leave Washington on December 3 and his first stop will be Rome, where he will see Italian Ministers and the Pope.

THE NEWS IN PICTURES

THE SHAH OF PERSIA IN JORDAN: In a large white car, the Shah and King Hussein of Jordan drive through the streets of Amman, accompanied by a strong military and police escort. The Persian ruler made a five-day State visit to Jordan last week. Relations between the two countries have become closer since the advent of General Kassem in Iraq. A common attitude towards the present regime in Bagdad was understood to have been the subject of discussions between the Shah and King Hussein.

ARRIVAL IN AMMAN: The Shah of Persia and King Hussein walk across the airport of the Jordanian capital. The Imperial visitor had flown in his Fokker "Friendship" aircraft and was escorted into Amman by Hawker Hunters of the Jordanian Air Force. It was reported that he had not taken the direct route over Iraq from Teheran to Amman but had made a longer flight over Kuwait and Saudi Arabia. The Shah was due to return to Persia at the end of last week. On Tuesday of this week (November 10) King Hussein was expected to leave Jordan for a holiday in Europe.

On right—

THE FUNERAL OF THE KING OF LAOS: In front of the Royal palace in Luang Prabang, drummers on the steps beat out a lament. From the pole above the doorway the national flag is suspended on a long cord. At the doorway attendants are wrapping the Royal coffin in silk. King Sisavang Vong, who died at the end of last month, was aged seventy-four and had been on the throne of Laos since 1904. In recent years he had suffered severe ill health and most of the Royal functions and duties had devolved on the Crown Prince, Tiao Savang Vatthana, who now succeeds to the throne.

MR. NEHRU AT MEERUT: The Indian Prime Minister addresses a huge crowd at the stadium in the town, 40 miles north of Delhi. He was speaking after the Ladakh incident in which a group of Indian policemen were ambushed by Chinese; nine Indians were killed. Mr. Nehru said the incident had caused grave anxiety in India, but added: "I do not say there will be war with China." In a speech in Delhi a few days later, on October 31, Mr. Nehru said: "If any country thinks that we are a weak race it is mistaken. China may be big, but so is India." He reaffirmed that India would not seek military alliances with any country to counteract pressure from China.

THE ISRAELI GENERAL ELECTIONS: In a school building serving as a polling station in Jerusalem, recently-arrived immigrants wait to cast their votes. With the results nearly completed it became clear that Mr. Ben-Gurion was in a stronger position than before. His party, Mapai, raised its strength from just over 32 per cent. of the votes to 38·5 per cent. Its main challenger, the right-wing Herut, also increased, from 12·6 to 13·4 per cent. About 80 per cent. of Israel's 1,216,000 voters went to the polls. Since the election system is one of proportional representation, and since none of the splinter groups polled enough for even a single seat, the new Knesset comprises the same parties as before. Mapai has 47 members to Herut's 17, National Religious Party's 12, Mapam's 9 and General Zionists' and Ahdut Avodah's 8 each. Mapai's added strength put Mr. Ben-Gurion in a much firmer position to negotiate with the other parties in forming a Coalition Government.

CYPRUS CELEBRATES THE ANNIVERSARY OF GREECE'S ENTRY INTO THE WAR: Archbishop Makarios (centre background) is surrounded by Greek Cypriot Ministers and officials of the Greek Diplomatic mission on the veranda of the Greek Consulate in Nicosia. They are watching Greek Cypriots march past in a parade to commemorate the day in 1940 when Greece joined the Allies. At the end of last month Archbishop Makarios stated that work on the proposed Constitution for the Cyprus Republic would be resumed. It is due to be proclaimed on February 19 next year. It was believed in influential circles on the island that Sir Hugh Foot, on his return from London, had conveyed new British proposals regarding bases on Cyprus. It was also believed that the Turkish delegates had considered means of achieving a compromise on controversial issues. Later, the mayors of Nicosia and five other towns issued a memorandum which criticised Archbishop Makarios.

THE NEWS IN PICTURES

TESTS IN THE MEDITERRANEAN: Members of the ship's company on the forecastle of H.M.S. *Girdle Ness*, the guided-missile trials ship, haul in a dummy Sea Slug missile in a specially constructed cage. On the right is the Royal Fleet Auxiliary supply ship *Retainer*. Behind the seamen hauling in the Sea Slug is the launching ramp for guided missiles. The vessels were taking part in replenishment-at-sea exercises in the Mediterranean. The Sea Slug, which is the Royal Navy's medium range anti-aircraft ballistic missile, will be used to arm the four guided-missile destroyers of the Hampshire class, on order to be built in the near future.

FLOODS IN NEW SOUTH WALES: Two men in a motor-boat are on their way through a flooded street to take part in rescue operations at Maroubra, near Sydney. The floods, described as the worst in memory, followed torrential rain with falls of up to 8 ins. along Australia's south-eastern coast. Thousands of people were driven from their homes and road and railway services were dislocated. At one place near the Victoria border the highway was 20 ft. under water. Large areas of country were inundated.

A MEMORIAL TO THE FRENCH RESISTANCE FIGHTERS: M. Debré, the French Prime Minister, unveils a plaque at Mont Valerien, an ancient fortress on the outskirts of Paris. In left foreground is M. Triboulet, the Minister for ex-Servicemen. During the war many French resistance fighters were imprisoned and executed in the fortress. The inscription on the plaque records that between 1940 and 1944 4,500 of them " were shot by the enemy for their indomitable faith in the destiny of their country."

AFTER THE INVESTITURE: General Sir Hugh Stockwell shows the insignia of the G.C.B., which he had just received from the Duke of Edinburgh at an Investiture in Buckingham Palace, to his wife and daughter. Recently appointed Colonel Commandant of the Royal Army Educational Corps, General Stockwell was General Officer commanding ground forces in the Suez operation in 1956.

On left—

AN AWARD FROM THE DUKE OF EDINBURGH: Sergeant Robert Whitehouse, of the 73rd Company, Birmingham, Boys' Brigade, holds the certificate of the Award presented to him at Buckingham Palace by the Duke. He had reached the gold standard of the Award scheme instituted by the Duke of Edinburgh to recognise the work done for the community by youth organisations. Awards were presented to 139 boys and 15 girls who had rendered outstanding service to the community.

BISHOP DIBELIUS PREACHES IN EAST BERLIN: The Chairman of the German Evangelical Church delivers the Reformation Day sermon in the Marienkirche in the Communist sector of the city. There was no interference from the civil authorities, although they had previously warned Dr. Dibelius, who is the Protestant Bishop of Berlin, that he had no right to carry out pastoral duties in East Berlin because of his refusal to recognise the East German Communist regime.

THE NEWS IN PICTURES

THE CANADIAN MINISTER FOR EXTERNAL AFFAIRS IN LONDON: Mr. Howard Green sits in the residence of Mr. George Drew (standing), the Canadian High Commissioner to the United Kingdom. On left is Mrs. Green and on right Miss Sandra Drew, the High Commissioner's daughter. Mr. Green spent three days in London last week for consultations in Whitehall. He was also received by the Queen at Buckingham Palace.

MEMBERS OF THE PUBLIC SHARE A ROYAL PRIVILEGE IN JAPAN: The Court Musicians play in the Imperial Palace in Tokyo. This performance of traditional music by the Imperial Orchestra was the first ever attended by the general public, who also saw dancing by the Court dancers. Previously such performances of music and dance had been given only for members of the Imperial family and their guests.

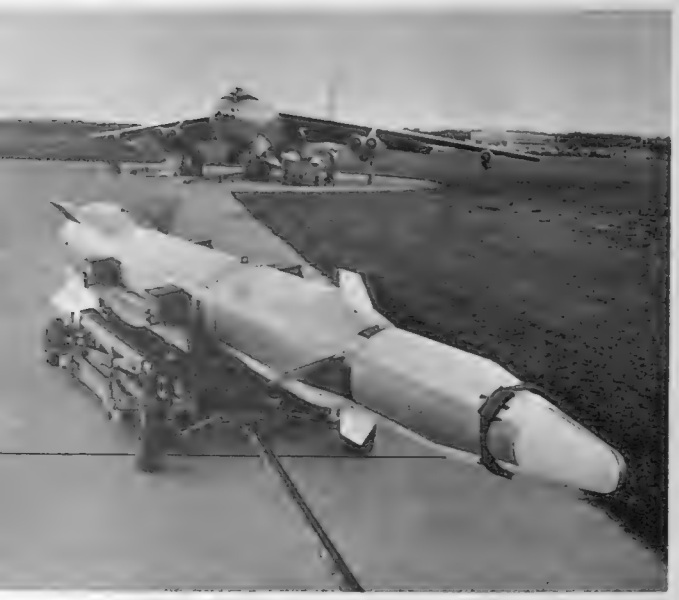
A TRIBUTE TO AN OCTOGENARIAN LONDON JOURNALIST: Mr. Hannen Swaffer (left) looks at his bust, by Mr. Laurence Bradshaw, during a dinner held to celebrate his eightieth birthday. With him is Mr. A. C. Duncan, the Chairman of Odham's Press, who presented the bust to the octogenarian journalist as a tribute from his many friends in Fleet Street and elsewhere. Mr. Swaffer joined the staff of a London paper in 1902. The senior living London journalist is probably Sir Winston Churchill, who was contributing to the Press before the present century.

AMALGAMATION OF TWO FAMOUS REGIMENTS: General Sir Francis Festing (third from right), Chief of the Imperial General Staff, attends the consecration of colours of the King's Own Royal Border Regiment at Barnard Castle, County Durham. Under the recent reorganisation scheme for the Army, the new regiment consists of the King's Own Royal Regiment and the Border Regiment.

A ROYAL VISIT TO OCCUPATION FORCES IN GERMANY: King Baudouin of the Belgians walks beneath "arches" formed by the cannon of heavy tanks of a Belgian armoured unit at a barracks at Düren, in West Germany. The picture was taken during the King's three-day tour of Germany last week. His engagements included a visit to Dr. Lübke, the Federal President.

THE NEW BRITISH COMMANDER IN ARABIA: Air Chief Marshal Sir Hubert Patch, the recently appointed C.-in-C. British Forces, Arabian Peninsula, is greeted at a parade in his honour by the Sultan of Lahej at Ittihad, in Aden Protectorate. Last month Lahej became a member of the Aden Federation of Amirates.

AERIAL LAUNCHING FOR A MISSILE: An American B-47 Stratojet bomber, with a Bold Orion missile attached to its fuselage under the starboard wing, is blasted off the runway by its six jets, at Cape Canaveral. The missile, launched from the plane, was aimed at a point 10 miles ahead of *Explorer VI*, the paddlewheel satellite, which was successfully sent into orbit round the earth on August 7. There was no attempt to intercept *Explorer VI*; the purposes of the exercise were to demonstrate the feasibility of firing a ballistic missile from an aircraft and to check the accuracy of the guidance system at exit angles approaching the vertical. The firing, over the Atlantic Missile Range at Cape Canaveral, took place on the same day as *Explorer VII*, the gyroscope satellite, was successfully launched. At that time *Explorer VI* was 160 miles above the earth, at the lowest point in its elliptical orbit. The Bold Orion, officially designated the 199-B Air Launched Ballistic Missile (ALBM), has a range of 1,000 miles. It is a supersonic missile which will enable bombers to fire at enemy targets without coming within range of anti-aircraft defence.



SENT INTO SPACE: The United States Air Force Bold Orion missile is on its handling dolly before being installed on the B-47 Stratojet which is in the background. The two-stage missile is 37 ft. long.

On left—

FOR EXPLORING THE BOTTOM OF THE PACIFIC: The United States bathyscaphe *Trieste* is on her way under tow to the San Diego diving area off California for preliminary tests before departing for the Mariana Islands in the Pacific Ocean. *Trieste* was bought by the United States Government from Professor Auguste Piccard and M. Jacques Piccard, the Swiss underwater explorers, who designed and built her. Capable of making descents to 30,000 ft., the bathyscaphe, in her three months in the Mariana Islands, will be used to study undersea life, light and sound, and the probable effects of deep currents on submarine navigation. In addition, *Trieste's* crew will collect facts which will be useful in building new underwater craft and in the maintenance and operation of existing submarines.

On right—

JETSTAR AND STAR-FIGHTERS: At the Lockheed Aircraft Corporation's plant at Palmdale, California, are, in the foreground, the Jetstar, a utility civil or military aircraft, and behind it two F-104 Starfighters. The Jetstar was announced in March 1957 and its prototype first flew in the following September, only 241 days after its basic design was made final. In its military form the aeroplane may be used as a transport; for training navigator bombardiers; for electronic countermeasures training; for fighter intercepting training; target towing; air photography and mapping; and other duties. In its civil version, the 60½-ft.-long jet aircraft has been ordered by several corporations as an executive transport. Powered by four Pratt and Whitney JT-12 engines giving a cruising speed of 600 m.p.h., the production models of the Jetstar will come off Lockheed's Georgia Division's assembly lines early next year. The plane takes ten passengers and requires a crew of two. The Starfighters are claimed to be the world's fastest combat aircraft, eighteen months ago setting up a world speed record of 1,404.19 m.p.h. A little earlier, a Starfighter established a world aeroplane height record of 91,249 ft. The United States, Canadian and West German Air Forces use them as front-line fighters.

IN THE AIR AND UNDER THE SEA

A U.S. Air-Launched Missile; Jet Aircraft; a Flying Jeep; Riding on an Air Cushion; Plumbing the Ocean Depths

AN AMERICAN FLYING JEEP: The machine is coming down to land at the Santa Barbara airfield, in California. Behind the pilot is a gun, and on the starboard and port sides two screws giving vertical and horizontal flight. The flying jeep is designed by the Aerophysics Development Corporation, a subsidiary of the Curtiss Wright Corporation, and is one of three similar machines competing for U.S. Army contracts. Army requirements called for a vehicle weighing, and capable of carrying, 1,000 lb. The machine will be used for low-level reconnaissance work.

On right—

A DEVELOPMENT FOR THE AMERICAN ARMY: The Curtiss Wright flying jeep is watched by spectators as it flies over Santa Barbara airfield. Among observers at the machine's trials were Army experts.

On left—

AN AMERICAN "FLYING SAUCER": The craft glides along a few inches above the ground on its cushion of air. Covered by a wire grille are the two fans in their ducts at the front of the machine. The fans provide the air cushion on which the "flying saucer" rides and also pull it through the air. It was built by National Research Associates, Inc., of College Park, Maryland, for the United States Army Ordnance Tank Automotive Command. The machine was one of several similar craft demonstrated at Princeton, New Jersey, to close a meeting of American and European scientists at the Forrestal Research Centre at Princeton University. The title of the meeting, which lasted three days, was "Symposium on Ground Effect Phenomena." Among the machines, which attracted considerable attention from Army and civilian experts, was a home-built craft.

ALPINE BIRD WATCHING

At an Observation Post on the Swiss-French Border

The first Alpine bird observatory and ringing station was opened in time for the autumn migration. It is situated on the watershed between Switzerland and France on the Col de Bretolet, behind Champery and the Val d'Illiez. The post has been built by Swiss ornithologists with financial backing of the Swiss National Fund for the Advancement of Scientific Research. It is manned by Swiss, British and French ornithologists.

Until not so very long ago the Alps were regarded by many people as an insurmountable barrier for migrating birds. In fact, under certain weather conditions, up to 300,000 birds a day fly through the Bretolet pass during the migration period. The Alps do present a barrier, which is insuperable during bad weather, and the birds are forced to wait at the northern foot of the mountains, where a "traffic jam" develops. The birds move along the foothills westwards, instead of moving south-west. The Val d'Illiez acts as a collecting point, since it is the first valley to the south-west and can be seen from a distance. As topographical conditions differ greatly on the other side, no spring migration is observed at the Col de Bretolet.

The birds are watched, counted and listed so that a statistical record can be compiled giving a check of the numbers and species. Various methods used by the birds to cross the mountainous area are also studied. At the same time samples are caught and ringed. More than 300 ft. of the top of the pass are barred by nylon nets, day and night. The average catch is about 600 a day during migration. After the birds have been measured and ringed, they are set free to continue their journey to the South.

The most frequent species which have been caught this year are coal-tits, bluetits, chaffinches and citril finches. But a wide variety have been found in the nets—short-eared owls, barn owls, tengmalm's owls, woodcocks, hobbys, black woodpeckers, great spotted woodpeckers, alpine choughs, hoopoes, tawny pipits, rock buntings, ortolan buntings, reed warblers, whinchats, blackcaps, spotted flycatchers, goldcrests and firecrests.

BIRD WATCHING IN THE ALPS: The first Alpine bird observatory and ringing station is situated on the Col de Bretolet, near Champéry. It is on the border—left is Switzerland and right, France. *On right*—A British ornithologist, Mr. P. H. Jones, watches the stream of migratory birds passing overhead.

CATCHING THE BIRDS: Mr. P. H. Jones (left) and a French ornithologist, M. J. F. Terrasse, disentangle a blue-tit from a net on the Col de Bretolet. Tits are liable to get so entangled in the netting that they become nearly invisible.

On left—

EN ROUTE: Clinging to the netting is a member of the tit family. Birds pass over the section of the Alps, through the Val d'Illiez, during the autumn migration to the South.

AT THE OBSERVATORY: *Left*—A tengmalm's owl, having been caught and ringed, stays at the post for a while. *Centre*—A jay is measured so that full particulars can be entered on a punched card. *Right*—Birds in light collecting bags are passed into the room at the Swiss observation post in which the birds are measured.

AUSTRALIA'S POWER AND WATER PROJECT

Progress in the Snowy Mountains Hydro-Electric Scheme, which is Bringing Great Economic Benefits to Two States

In order to meet the needs of an expanding economy and support an increasing population, Australia has for many years been planning ahead for the best possible use of its natural resources. One can perhaps understand something of the problems facing the planners by considering an elementary fact about the country's water supplies. The average annual flow of Australian rivers, if spread evenly over the whole of the territory of Australia, would give a depth of water of about 1¼ in. Compared with this meagre yield, the United States of America from its ten main rivers alone would obtain a depth of water of nearly 6 ins.

Therefore it follows that Australia must think imaginatively and on a large scale to provide the water required for so many purposes if the population is to flourish. The Snowy Mountains Scheme is an example of this type of thinking. It is an immense engineering project of reservoirs, dams, underground power stations and miles-long tunnels harnessing the waters of three rivers in the mountains in South-East Australia in areas of New South Wales and Victoria.

In this corner of the continent are the Australian Alps, the southern end of the Great Dividing Range. The highest points of the Alps are in the Snowy Mountains. Covered in snow for approximately half of every year, these peaks are the source of three important rivers. They are the Murray and Murrumbidgee, flowing westward through plains which can be made still more fertile by the expansion of irrigation; and the Snowy River, which runs in the opposite direction, to the south-east coast of Victoria.

The Snowy waters are considerable in volume and flow from high altitudes. By diverting them inland through long tunnels driven through the mountains, the difference in elevation between the western and the eastern rivers can be utilised. Thus a double purpose will be achieved by the scheme, which is well on its way to fruition. Huge quantities of electric power will be produced for new industries and no fewer than 1,000 sq. miles of dry lands will be irrigated.

The basic idea for the Snowy Scheme was conceived as long ago as 1884, when severe drought caused the authorities to give special attention to the question of improving water supplies. From that date onwards various proposals were put forward, increasing in their scope as engineering methods developed. Plans had become well advanced in the '30's, but owing to the interruption of World War II, it was not until the late '40's that the design took its final shape. By that time surveys had shown that the potentialities of the waters from the Snowy Mountains were much greater than had hitherto been realised. In the summer of 1949 an Act of the Federal Parliament established the Snowy Mountain Authority and laid down an agreement between the Commonwealth Government and the States of New South Wales and Victoria for the construction and operation of the scheme. Work was immediately put in hand.

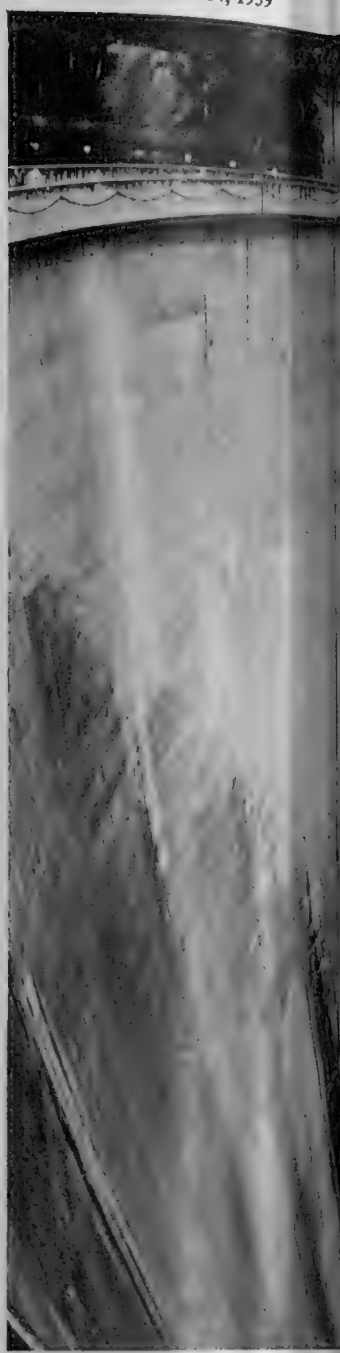
A DAM TAKES SHAPE: Work is in progress on the structure of the Tantagara dam which will control a main reservoir in the Snowy Mountains Hydro-Electric Scheme. *On left, below*—A bulldozer levels the ground at Tantagara. In both pictures water can be seen beginning to form the lake behind the dam. Work on the ambitious scheme in the Australian Alps is now advanced.

Although, from the very nature of its size, the scheme may appear complex, its fundamental design is simple. The waters are being dammed on the eastern side of the mountains and turned westward through the lengthy tunnels under the range to the dry plains of the interior. Geographically there are two development areas: Snowy-Murray and Snowy-Tumut. The Tumut is a tributary of the Murrumbidgee River.

The first part of the project to be completed was at Guthega, on the Upper Snowy. Features of this construction include 18 miles of reinforced concrete aqueduct, a three-mile-long

(*Continued on page 277*)

A SECTION OF ONE OF THE MOST INTRICATE CIVIL ENGINEERING PROJECTS EVER UNDERTAKEN: The Eucumbene dam is half a mile thick at its base and 381 ft. high. Its reservoir will hold eight times more water than is contained in Sydney harbour. Besides dams and reservoirs, the Snowy Mountains Scheme provides for a series of long tunnels to divert the Snowy River to join the Murray and Murrumbidgee Rivers.



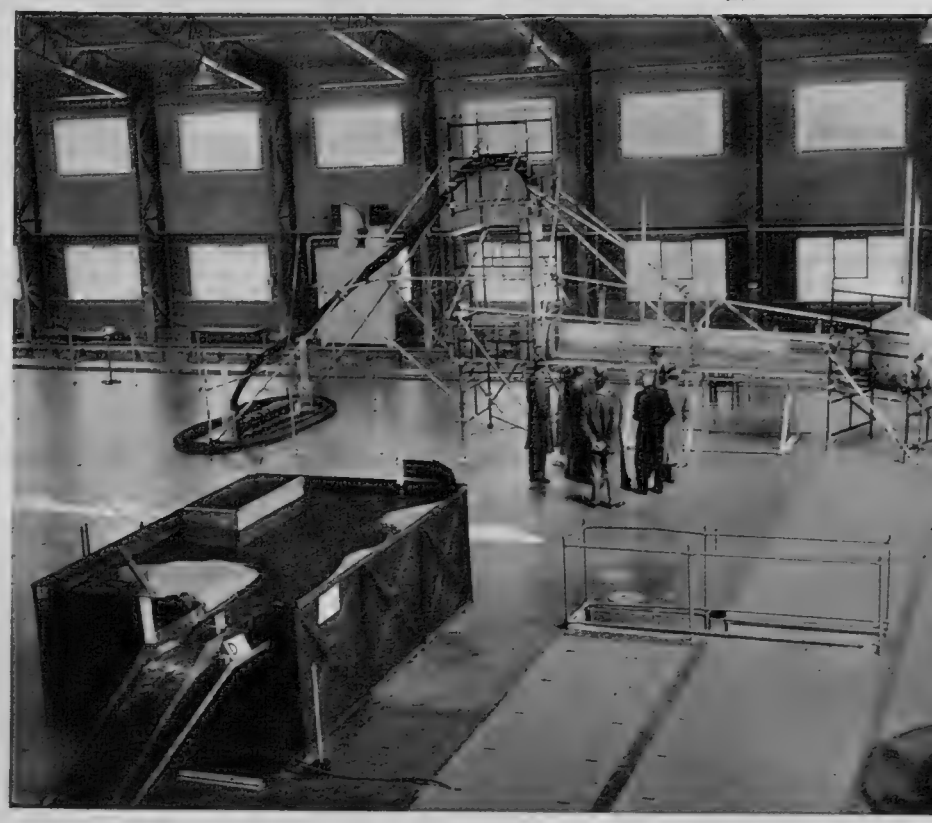
AUSTRALIA'S POWER AND WATER PROJECT

On right—

WORK COMPLETED: The Tumut Pond dam is fed with water through a 14-mile-long tunnel under the mountains and supplies the Tumut I underground power station. Work on this first concrete dam of the scheme was finished in the middle of last year and the T.I. station has been completed this year and started generating power.

BELOW THE SNOWY MOUNTAINS: Miners drill the floor of one of the chambers for the Tumut II underground power station. This will be completed in 1962. In order to construct a generator hall, a mile-long tunnel had to be dug into the mountains.

CONTROLLING THE FLOW OF WATER: The scene is the present Spring in the south-east corner of Australia (Autumn in Britain). A junction shaft keeps the water at a certain level. Thus the flow through the Eucumbene-Tumut tunnel is maintained at a regular pace.



A VITAL DEPARTMENT: Models for the project are studied in the Snowy Mountains Scheme's research centre. In left foreground is a model for a dam and its overflow. In background is a device for experiments in designing tunnels.

On left—
THE TOWN THAT MOVED: All that remains of the old town of Adaminaby is rubble. Over 100 buildings were removed from here and rebuilt in the new Adaminaby, 6 miles from the area flooded for the Scheme.

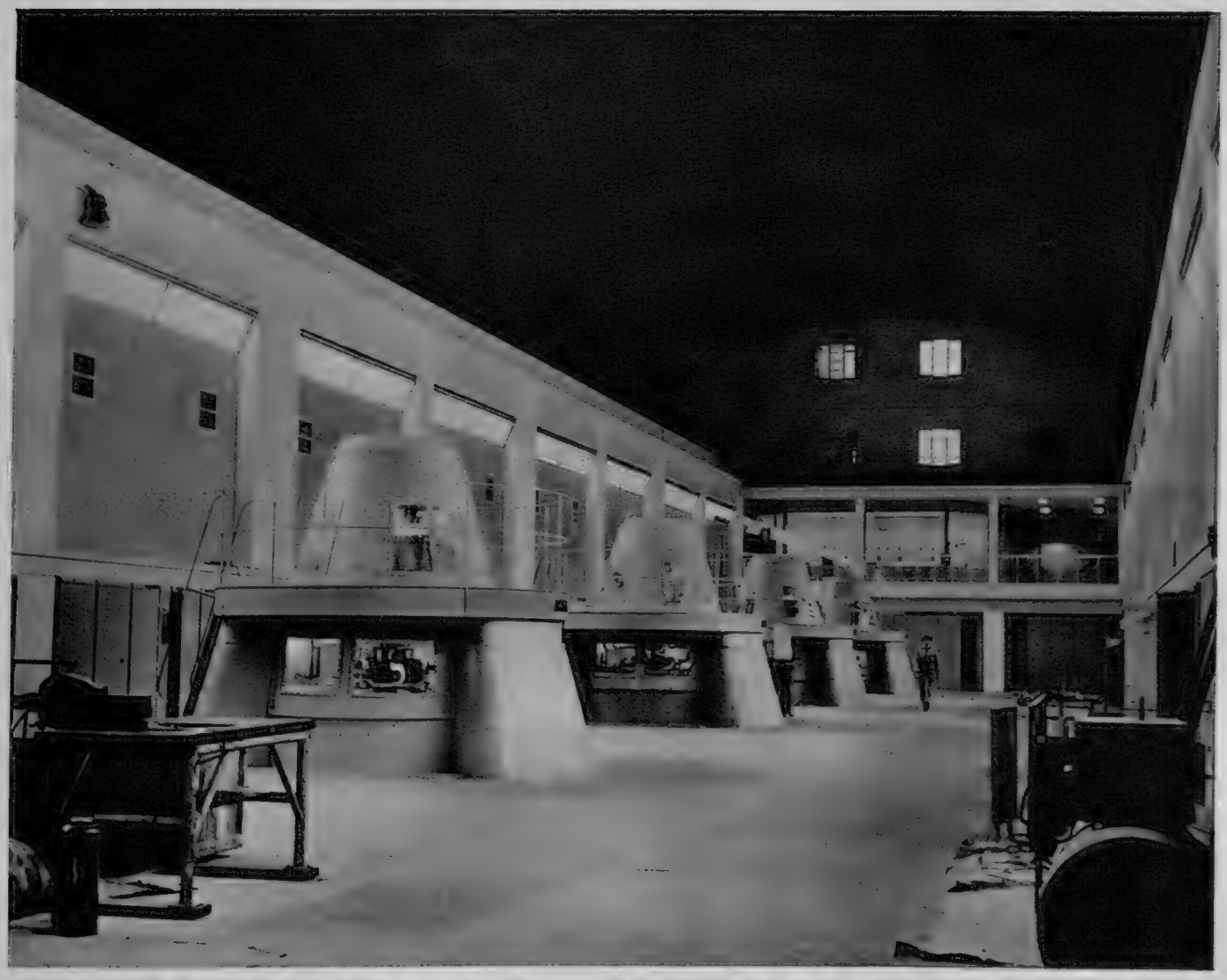
(*Continued from page 275*)

tunnel and a reinforced concrete power station which began to operate in 1955. This is in the Snowy-Murray area. In recent months a section of the Snowy-Tumut area has started to produce power from the T.1 underground power station, linked by tunnels with the Tumut Pond and Dam. The machine hall of the station is in an immense cavern 1,200 ft. below ground.

Meanwhile work proceeds on numerous other projects in both the development areas. When in 1975 the entire Snowy Mountains Scheme is finished, it will have nine main dams and storages, five main diversion tunnels and eleven power stations.

In many of their tasks the engineers have often been working well within their schedules. In driving the Eucumbene-Tumut tunnel several new world records for tunnelling were claimed. Such achievements are all the more remarkable when it is realised that numerous massive difficulties have to be overcome before work can begin. Roads have to be built into the mountains, and camps and living quarters established for the workers. In winter there is a constant battle with snow. In one area a small town—Adaminaby—had to be moved so that its site could be submerged to supply one of the reservoirs. Over 100 buildings were transferred to the new Adaminaby.

A huge labour force is now controlled by the Snowy Mountains Authority, which typifies the cosmopolitan outlook of Australia by employing workers from over thirty nations. For all of them, the ultimate object is the same—the increase of irrigation and power for the future of Australia.



IN AN UNDERGROUND POWER STATION: At the far end of the Generator Hall in the T.I. power station is the control room. The Snowy Mountains Scheme, when completed in 1975, will have eleven power stations. Companies from several European countries and America are engaged in the construction work for the project. It is estimated over thirty nationalities are represented in the technical and labour forces.

OLD AND NEW ADELPHI

Historic Buildings and Associations In and Around John Adam Street, the New Home of "The Sphere"

Drawings by GEOFFREY FLETCHER

The new home of THE SPHERE is in John Adam Street, which formed part of the daring Adelphi design of the Adam brothers. But the historical associations of the area stretch back through the great mansions built in medieval and Renaissance times along the Thames from Temple to Charing Cross. For instance, it was in Durham House in May of 1553 that Lady Jane Grey played her part in Lord Dudley's plot which ended tragically for her on the scaffold. Remaining in the Victoria Embankment Gardens is the York Water Gate, now isolated from the Thames by Victorian engineering, but which originally was the gate giving access from the river to the gardens of the Duke of Buckingham's mansion.

The Adelphi lies on the route of the Royal Mile, running from the Palace of Westminster to the City of London. It was in the great age of English Georgian architecture that the area saw its finest buildings. The architectural scheme of the Adam brothers was remarkable. By the aid of arches on the riverside, the architects combined on different levels a residential and industrial area fronting on to the river. The main blocks of the scheme are now destroyed and only fragments remain of its past glory. Its destruction started, in effect, in 1872, when the exterior was remodelled in a style calculated to bring to Charing Cross some of the stucco amenity of the Victorian villa.

The story of the Adelphi is one of gallant enterprise to realise an imaginative architectural scheme with only the backing of a modest professional fortune. In 1768 Robert Adam and his two brothers, John and James, took a ninety-nine-year-lease from the Duke of St. Albans of the site of Durham House. They petitioned in 1771 for an Act of Parliament to enable them to reclaim a shallow "bay" formed by the Thames. By 1772, they were building. The Thames had an embankment for the first time. Brick catacombs supported blocks of houses level with the Strand. There was a "Royal Terrace" in the centre and the streets at the side terminated in pedimented and pilastered ends.

But financially the scheme went wrong. The Ordnance Department failed to rent all the vaults for storage and the houses did not sell. In order to save themselves from bankruptcy the brothers had to resort to a lottery. There were 4,370 tickets at £50 each, with 108 prizes, and the Adams remained solvent, although they were haunted by the speculation for many years.

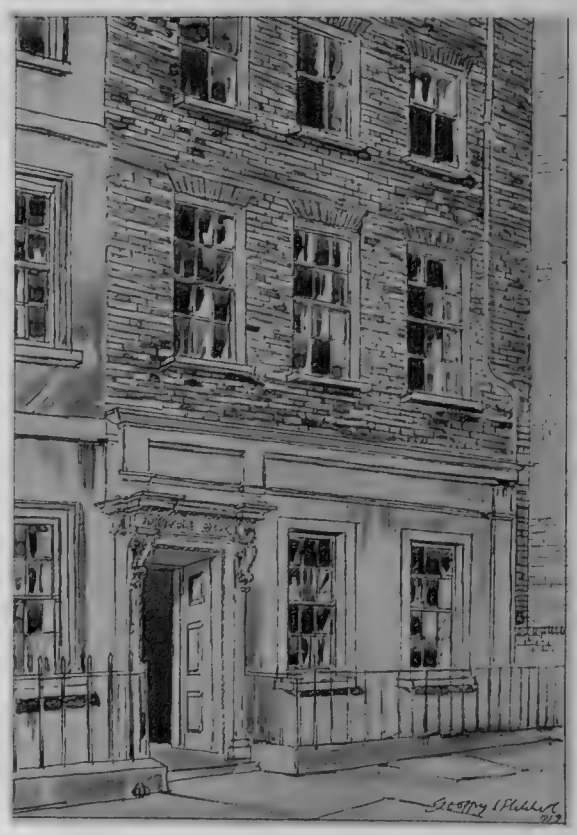
THE ROYAL SOCIETY OF ARTS: The building, which is No. 8, John Adam Street, is one of the most important examples in London of the work of the Adam brothers. It is the first building erected in England as the headquarters of a learned society and has been so occupied since 1774. Forming one of the few remaining parts of the Adelphi scheme, the building has three widely-spaced bays with attached fluted Ionic columns and a pediment. In the centre is a characteristic Adam version of the large Venetian window.

A NEW BUILDING ON AN HISTORIC SITE IN CENTRAL LONDON: Ingram House, a modern office block standing on the corners of John Adam Street (left) and York Buildings, in the Adelphi, is the new home of Illustrated Newspapers Limited, the proprietors of "The Sphere." It is close to Charing Cross and the Thames Embankment; York Buildings lead direct to the Embankment Gardens. Close to the car on the right of the drawing is the entrance to Lower Robert Street, which runs under Ingram House to link with the Embankment. The new building lying behind the south side of the Strand is one of many to be completed in this area in recent months. "The Sphere" is also being printed in a new area, the old works behind the former offices at 195-198, Strand, having moved to new premises in the Old Kent Road, in South-East London.

IN THE EMBANKMENT GARDENS: York Water Gate is among the few surviving parts of the great estates which, in the Renaissance, bordered the Strand between Temple and Charing Cross. Erected in 1626, the Gate gave access from the river to the gardens of the Duke of Buckingham's mansion, demolished in 1676. The gate was built by Nicholas Stone, possibly to a design by Balthasar Gerbier.

Below—

PART OF THE ORIGINAL ADAM DESIGN: No. 7, Adam Street, is the premises of *The Lancet*. Facing one end of John Adam Street, the unspoilt building has giant pilasters with honeysuckle decoration and a pediment. It is one of the best surviving fragments of the old Adelphi scheme.



On right—

A RELIC FROM AN EARLIER PERIOD: No. 5, York Buildings, was built at the beginning of the eighteenth century, thus antedating by half a century the Adams' Adelphi. York Buildings, which run down from John Adam Street to the Victoria Embankment Gardens, date from the early eighteenth century. No. 5 has been much altered both inside and outside, but although little of the original remains, it is still an elegant building.

THE NEW FORTH ROAD BRIDGE: The main pier on the north side of the firth is being extended towards the centre of the river. On the bank is the tower which, with a similar one on the south, will support the bridge. *Left*—The two main piers jut into the river. Background is Port Edgar. The bridge, of the suspension type, should be completed by the end of 1963.

BRIDGING THE FORTH

Work Proceeds on the New Road Suspension Bridge

Motorists and lorry-drivers wishing to cross the Forth have at present two alternatives. They may use the ferry plying the firth between North and South Queensferry beside the gigantic Forth Railway Bridge, or they may make a detour to Kincardine-on-Forth, where the nearest road bridge is situated. It has long been a project dear to the hearts of Scotsmen that a road bridge be built on the direct route to the north. Last September, when work began on the road bridge about half a mile upstream from the Forth Railway Bridge, this dream began to be realised. By the end of 1963, four years from now, the bridge should be open.

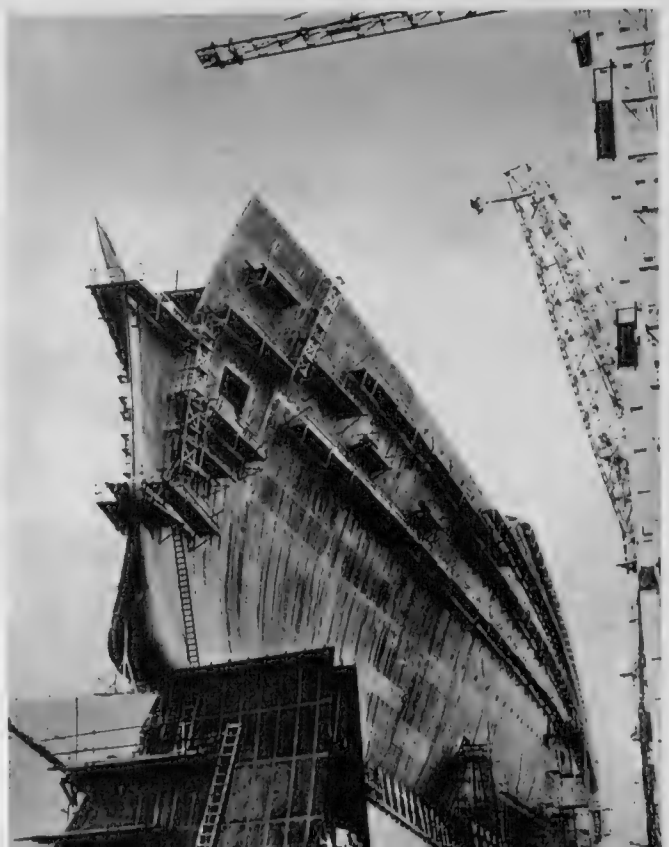
The Forth Road Bridge will be of the suspension type. With an overall length of 5,980 ft., it will be the longest of its kind in Europe and the fourth biggest in the world. Its length will be made up of three spans: two side spans, which are rapidly nearing completion, each 1,340 ft. long, and a central span 3,300 ft. long. To support these there will be cables from huge arches, one on each side of the Firth; that on the north bank has already been erected and work is proceeding on the foundations of the other. The cables supporting the structure consist of about 12,000 steel wires, each one-fifth of an inch in diameter, giving a total thickness of over 2 ft. They are capable of taking a tension of 14,000 tons. The bridge will carry across the river two 24-ft.-wide carriageways, two 9-ft. cycle-tracks and two 6-ft. sidewalks. Approach roads to the bridge, twelve miles long, are also under construction. The total cost of the project will be £15,100,000, towards which the Government is making a grant of £4,650,000.

IN YARD AND HARBOUR

Completing British and French Liners; Warships in Valetta Grand Harbour

THE LAUNCHING OF THE "ORIANA": Shortly after the ceremony, the largest liner to be launched in Britain since the *Queen Elizabeth* lies in the water at the Vickers-Armstrongs yard at Barrow-in-Furness. *Right*—Before a crowd of several thousand, Princess Alexandra pulls a lever to launch the 40,000-ton liner which is expected to be completed by next September. Destined for the Australian and Pacific route of the Orient Line at the end of 1960, the *Oriana* will cost approximately £14,000,000. She will have a service speed of 27½ knots, and 1,500 tourist class. carrying 630 first-class passengers She is expected to reduce the time of the voyage from Southampton to Sydney from four to three weeks, but will spend the same time in ports as Orient ships already on the run. *Oriana's* superstructure is made out of prefabricated aluminium; it weighs 1,020 tons and is the largest all-welded structure ever made for a ship. A new feature of the liner is her bulbous bow.

AN AMERICAN CASUALTY OFF THE COAST OF ITALY: The American cargo vessel *Exiria* is aground near Leghorn, on the western coast of Italy. Tugs (on the right) are trying to pull her free. A 6,500-ton freighter, the *Exiria* is owned by American Export Lines. She was on her way from Genoa and was just about to enter Leghorn harbour when strong winds pushed her towards the breakwater. The *Exiria's* master took action to avoid a collision and in doing so he put the vessel aground. She was refloated the following day with the assistance of tugs and towed into Leghorn. After a survey, negligible damage was reported.

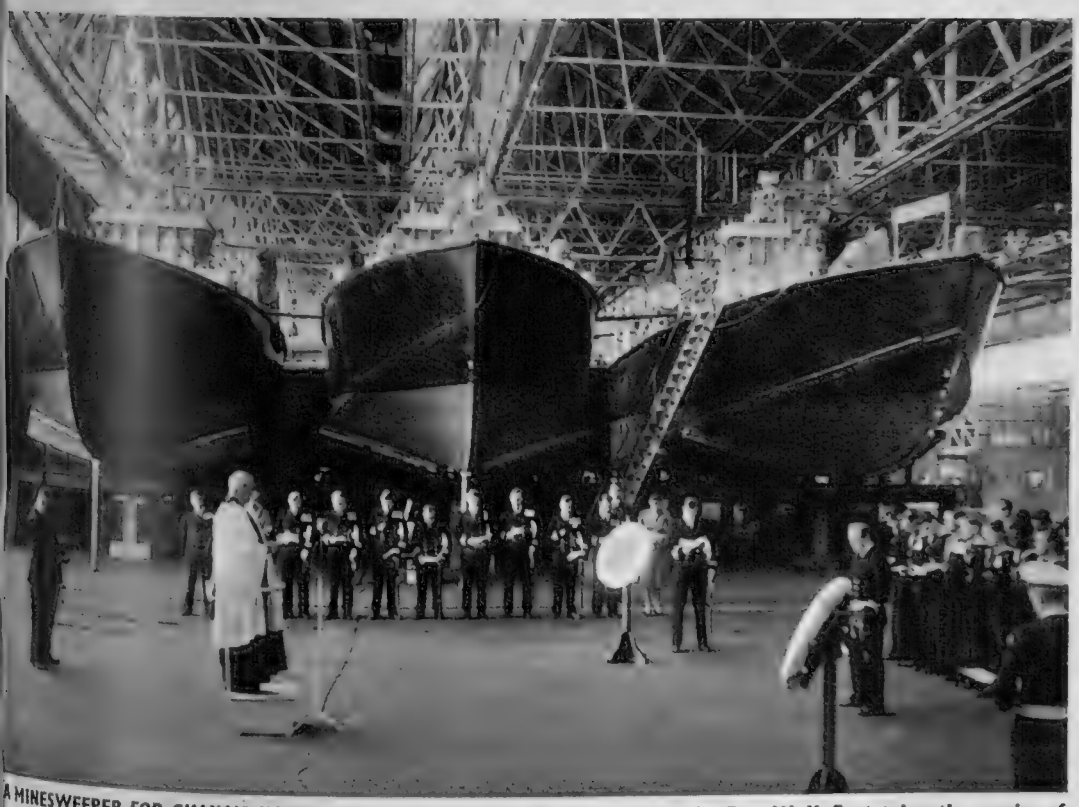


On left—
BUILDING A LINER IN FRANCE: In the foreground is one of the last prefabricated sections of the forepeak of the liner *France*, on the stocks behind. The ship, which is being built at Saint-Nazaire, is of 90 per cent. welded construction and much use of modern alloys is being made. Prefabrication methods, playing a large part in her building, have speeded up the work considerably and she will be launched next May. *France's* maiden voyage will be in 1962 when she will take her place on the French Line's Havre–Southampton–New York run. She is a replacement for *Ile de France*, which was taken out of service last year. The new 55,000-ton liner will have a speed of 31 knots and accommodation for 2,000 passengers.

IN LINE-AHEAD AT MALTA: In Valetta Grand Harbour are, from left, the British cruiser H.M.S. *Birmingham*; the American heavy cruiser *Des Moines*; and H.M.S. *Girdle Ness*. Background is H.M.A.S. *Tide Austral*, with, at her stern, H.M.S. *Amherst*.

The picture shows the continuing importance of the Grand Harbour at Valetta as a centre for the Mediterranean Fleets. The American heavy cruiser *Des Moines*, flying the flag of Vice-Admiral G. W. Anderson, Commander of the U.S. Sixth Fleet, was on a courtesy visit to Malta. H.M.S. *Birmingham*, a Southampton class cruiser, flying the flag of Rear-Admiral R. A. Ewing, Flag Officer (Flotillas) Mediterranean Fleet, had returned from exercises with warships of the Spanish Navy. *Girdle Ness* is a converted guided-missile experimental ship, which carries much secret radar guidance equipment. Also in harbour were the Australian fast fleet replenishment ship *Tide Austral*, which was launched in 1955, and the Royal Navy's naval armament carrier *Amherst*. Recently H.M. submarine *Teredo* was the first British warship to be commissioned in the dockyard at Malta, since it was taken over by a civilian firm. The yard will continue to supply naval repair work until the end of 1960.

COMMISSIONED AT MALTA: The Royal Navy submarine *Teredo*, under the command of Lieut.-Commander J. S. F. Burrage, leaves the Grand Harbour at Valetta to join the depot ship *Forth* at Sliema. She was the first British warship to be commissioned in the commercial dockyard of Bailey (Malta) Ltd. after the former naval dockyard had been taken over by the firm in the spring of this year. H.M.S. *Teredo* is due to leave Malta in December for her station in the Far East at Singapore. The submarine is a member of the "T" class of patrol submarines and is fitted with "snort" equipment. Completed in 1946, *Teredo* has since been streamlined. She is designed for endurance equal to a 42-day patrol.



A MINESWEEPER FOR GHANA'S NAVY: At the base at Hythe, in Hampshire, the Rev. W. V. Foot takes the service of blessing for H.M.S. *Ottringham*, the second minesweeper to be commissioned for Ghana. The service was held in a hangar because of rain. *Ottringham* later left for Takoradi, which she is to reach at the end of the month.

H.M.S. "BIRMINGHAM": She is in the Grand Harbour at Valetta. Completed in 1937 and reconstructed in 1950-52, the cruiser is on her last commission and is due to be sold for scrap in 1960.

OLD SALTS OF DROITWICH

For 1,000 Years the Spa Prospered in the Salt Trade; To-day it is Famous for its Brine Baths

By BRIAN VESEY-FITZGERALD

DROITWICH, though you would never guess it just walking round the place, is one of the oldest towns in Britain. The Romans, who had a profound appreciation of the value of natural springs, established a settlement here. Many Roman relics, including fragments of pavements, have been found here and are now in Worcester Museum. The Romans started the salt-making industry which was to bring prosperity to the town for many centuries. It is possible, indeed I think probable, that they also established brine baths, for they had a great fondness for bathing and a firm belief in the virtue of healing springs, though it must be admitted that no trace of any such baths has ever been found. It must, however, be remembered that the Saxons, who never shared the Roman belief in the virtue of healing springs (nor their belief in the value of bathing), would have allowed them to fall into ruin if they did not actively destroy them.

But, if they did not share the Roman fondness for bathing, the Saxons knew full well the value of salt. They maintained the salt-workings. A charter of 717 mentions "Saltwic," and this has been identified with Droitwich. So did the Normans. Domesday Book records the number of its salt-pans and the amount of wood used for its furnaces. Droitwich was created a borough as early as the middle of the twelfth century, sufficient indication of its national importance at that time. The prefix "Droit," by the way, was awarded the town, which was commonly known as Wich, by Edward III to denote that it was legalised—in other words, taxed—for the manufacture of salt. At the same time he prohibited other towns from manufacuring salt, a step deemed necessary in order to conserve timber. Enormous quantities of wood were required to provide fuel for the furnaces. Leland "askyd a saltar how muche wood he supposyd yerely to be spent at the furnacis, and he answeryd that by estimation ther was spent 6000 loads by yere. And it is yonge pole wood for the most parte, easy to be devidid in pecis."

It is difficult for us now to appreciate properly the tremendously important part played by salt in medieval times, the very prominent part that it played even in the weekly budget of the medieval housewife. For example, it was then customary to immerse fish and meat in salt for several months before bringing them to the table; we now know and use better and quicker methods of dealing with them. Again, salt was then commonly used as a manure; now its use for such a purpose is uncommon. To-day, even the use of salts for medicinal purposes is becoming less widespread.

The fact is that in medieval times salt was a fundamental of human life: a commodity of such immense value that it could be exchanged against gold, a commodity which could be (and gladly was) accepted in payment for services rendered, a commodity which would even be accepted in payment for a long lease. It was a most profitable business to be engaged in the manufacture of salt. At least, it was for some people. Leland, in his account of Droitwich, mentions a grievance of the townsfolk: "The great avauncement of the towne is by makinge of salt; and yet thoughe the commoditie thereof be syngular great, yet the burgesses be poore for the moste parte; becawse gentlemen [have] for the moast parte the great gayne of it, and the burgesses have all the labowre."

The "gentlemen" were a number of small producers who, in Leland's day, operated 360 pans between them. Throughout the seventeenth and eighteenth centuries the trade remained in the hands of small producers, but in 1805 a tax of £30 a ton was imposed on salt and this meant, just as modern commodity taxes have meant, the end of the small producer. The tax was abolished altogether in 1825, but by then the remaining small producers had come together and formed companies which could command the necessary capital and operate on a larger scale.

From then on the story belongs to the mid-twentieth century rather than nineteenth, with cut-throat competition, "take-over bids," and all the rest, culminating in the near-monopoly (which doubled the price of salt within a few months of its institution) of the notorious Salt Union Company. The Salt Union, in its search for quick profits, used methods which now appear unbelievably crude. They are described in detail in Calvert's *History of the Salt Union Ltd.*, a grim but fascinating book. The company came to financial ruin, and brought down with it the Droitwich salt trade, which had prospered for at least a thousand years, and almost the whole of the town.

To-day the salt trade in Droitwich is forgotten. Yet Droitwich, though it no longer lives on salt, is still a salt town, famous throughout the country and much farther afield for its brine baths. These brine baths were, it is said, discovered fortuitously in 1832 during the great cholera epidemic. The first brine baths, the Royal Baths, were opened in 1836, but the development of Droitwich as a spa did not really begin until towards the end of the century, when John Corbett founded the St. Andrew's Baths and set about laying out new streets and gardens. He was also responsible for the vast red-brick replica of a French château—the Château Impney, now a hotel—which he built to please his French wife. (She must, I think, have been a little surprised when she first saw the finished expression of her husband's devotion.)

Corbett, who was known as the "Salt King," was a very astute business man, who acquired great wealth and power. He used both wisely and well, and, until he sold out to the Salt Union, at huge profit to himself, he did a great deal of good for Droitwich. It may be said that by that one action he undid all the good; and it is true that he cannot escape all responsibility for the subsequent actions of the Salt Union and its deliberate suppression of the salt trade, since, when he sold out, he took care to have himself appointed a director at a very considerable annual salary. Be that as it may, the fact remains that but for Corbett there would be no Droitwich Spa; the place would be unknown even by name to the vast majority of English folk. It would be no more than an anonymous satellite of Birmingham.

The strange thing about Droitwich Spa is that it does not look like a spa at all. I cannot say that I am really familiar with the spas of Britain—I have, so far, had no cause to be. But it is said that all keen gardeners get rheumatism and go to Droitwich in the end, and I am a very keen gardener. I have come to associate the word "spa" with a certain dignity of architecture and lay-out, and with a certain opulence about the chief shopping centre. Consider Bath, Cheltenham, Leamington, or Tunbridge Wells. Comparisons are odious, I know, but there is really nothing like that about Droitwich. How could there be? The last quarter of the nineteenth century was not a peak architectural period in our history.

Mind you, there are some charming buildings in old Droitwich. I like the Cock Inn and the Priory House particularly. There are two fine old churches: St. Andrew's, with its unusual ground plan, and St. Peter's, which stands in the meadows to the south of the town and may be reached by a pleasant footpath. Friar Street is especially delightful with its timber-framed houses. There is some very pleasant "black-and-white" in Droitwich, genuine and old: there is also at least one truly astonishing manifestation of the "black-and-white" cult carried out with a paint brush. I do not know that this really matters all that much. If you do not look too closely—or if you don't know—the effect is undoubtedly pleasing.

Nor is there the "spa opulence" about the shopping centre. The shops are more than adequate: I am sure about this, because I was able to buy my tobacco, which is not commonly stocked, without any difficulty, over the counter of the first shop I tried, and I think it most unlikely that I should have hit, first time, upon the exception. But opulence, no. The reason is that Droitwich is too close to Birmingham. You have but to board one of the frequent buses. For Droitwich, though so widely known as a spa, is, above all, a dormitory town, one of a ring of dormitory towns serving Birmingham, this despite the fact that there has in recent years been some invasion of light industries. Most of the resident population of Droitwich, it seemed to me, goes daily to work in Birmingham.

Before I went to Droitwich I read in a guide-book that "it looks delightfully fresh and gay and modern, for its salt springs have solved for it the secret so many have sought in vain—the secret of eternal youth." You could not want a better boost than that. Well, it looked pretty empty to me—which is why I think that most of the population must go to work in Birmingham—and gay is not the word I would have chosen. I would have substituted "serene."

Droitwich is a happy place. You cannot walk about it for long without becoming aware of this. It may sound silly (I have no doubt that it does), but an atmosphere of quiet, serene happiness really does pervade these tree-lined streets. It came as a great surprise to me; I had not expected it at all. Dormitory towns, taken as a whole, are pretty miserable in the daytime, and the people who go to Droitwich Spa are people suffering from the most painful forms of rheumatism and nervous troubles. I expected to find it all rather grim; instead, I found a happiness that springs from courage and profound faith. It spreads beyond the invalids, too: it covers the town.

It says a good deal for those brine baths and the enterprise of Mr. Corbett. Whatever harm he may have done when he sold out to the Salt Union, here is his true memorial: and I wonder how many of those who benefit from his foresight have even so much as heard of him? The salt is really salt—twelve times the strength of sea-water and of an even greater density than the famous salt water of the Dead Sea—so salt that you cannot sink. I know, because I have tried it. Many perfectly healthy people do. You roll and you bounce and you just cannot sink. You can even have your tea sitting on the water from a tray floating on the water. Of course, I had heard of all this before. But now I know why these brine baths do so much good, so much more than mere physical good. You cannot sit on that water for long before you start giggling at yourself.

EXTENSIONS AT STONYHURST—A NEW WING FOR THE FAMOUS ROMAN CATHOLIC SCHOOL: In its setting of trees and fields of the Ribble Valley, in Lancashire, the school is about 4 miles to the north-west of Blackburn. Extreme left is the work in progress on the new wing, which will provide an additional eighty-four senior boys' rooms and private studies, and new classrooms, libraries, recreation rooms and a community refectory. As a result of the new wing, some two-thirds of the boys at or approaching the top of the school will have private studies. Including the preparatory and junior schools housed in separate buildings, Stonyhurst has 600 boys. In the foreground can be seen the long, straight drive running between two ornamental ponds, known as canals. To the right is the church, built in a perpendicular style in 1828. The main front of the school is early seventeenth-century and was the house of Sir Thomas Weld, who gave his home to house the school in 1794. Stonyhurst is the successor of a school founded at St. Omer about 1592, which moved first to Bruges and then to Liège. It was driven to England by the French Revolution.

EL ALAMEIN MEMORIALS

The Newly Opened German Memorial Joins the British and Italian Monuments

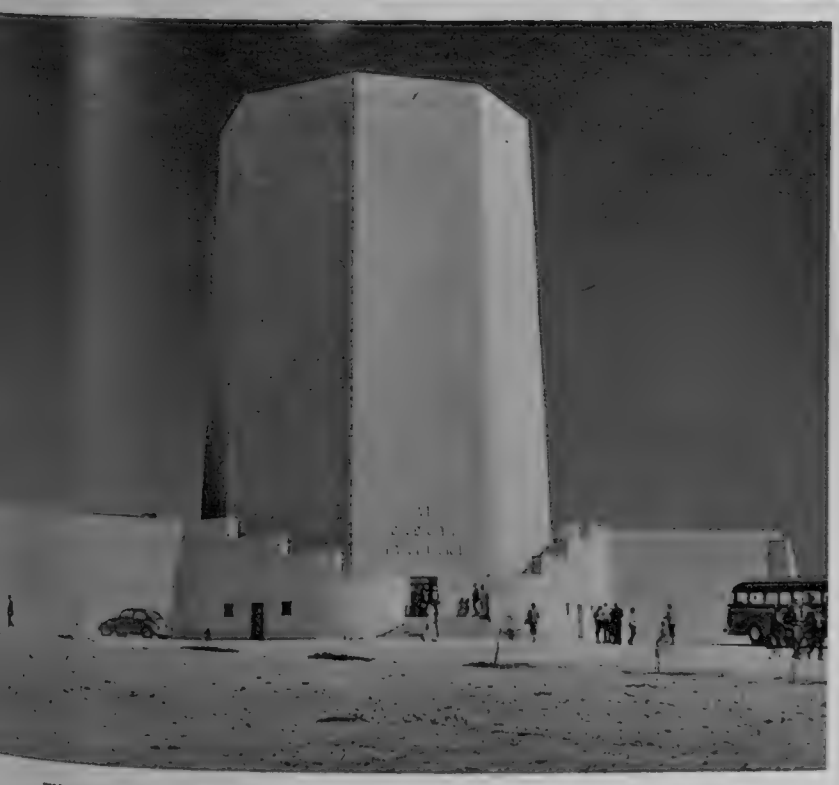
At El Alamein, seventy miles to the south-west of Alexandria, there are now three monuments to commemorate the dead soldiers of both sides who were killed during the fifteen days of fighting in this crucial battle in 1942. The widow and sister of Field-Marshal Rommel were among those who attended the recent ceremonial inaugurating the bleak and fortress-like German memorial. Also present were some fifty veterans of the Afrika Korps, the group which Rommel trained as the spearhead in his desert warfare. Wreaths were laid at the same time at the British and Italian memorials.

It was announced that Frau Rommel and General von Liebenstein, representing the Federal German Defence Ministry, were to attend a similar ceremony to inaugurate a German memorial at Tobruk, the capture of which was the climax of Rommel's success. El Alamein, the last defence of Egypt, marked his shattering defeat. At Tobruk he took an estimated 25,000 prisoners; at El Alamein he lost 75,000 men.

COMMEMORATING THE GERMAN DEAD: The new German memorial outside El Alamein is inaugurated. It is in the form of a fortress and has a series of vaults containing the remains of 4,200 German soldiers who died during the battle. Frau Rommel, widow of the Afrika Korps commander, Field-Marshal Rommel, and his sister, Lucie Rommel, were among those who attended the ceremony. General von Liebenstein represented the Federal German Defence Ministry, and about fifty veterans of the Afrika Korps were among the 300 Germans who were present at the ceremony.

On right—
ON THE ANNIVERSARY OF EL ALAMEIN: In front of the German War Memorial, Herr Weber (left), the Federal German Ambassador to Cairo, delivers his speech during the inauguration. Beside him is Frau Rommel. El Alamein was fought on the fifteen days following October 23, 1942.

INSIDE THE MEMORIAL: Relatives of German soldiers who died during the battle fought some 70 miles to the south-west of Alexandria stand in one of the vaults inside the fortress-like building. Most of the German dead were members of the Afrika Korps, formed by Rommel for the Africa campaign, and which was decisively beaten at El Alamein.



THE ITALIAN WAR MEMORIAL: The tall, plain structure was erected to commemorate the Italian soldiers who died in the decisive battle of the Africa campaign. It was unveiled at Tel-el-Issa by the Italian Prime Minister at the beginning of this year. Rommel lost 75,000 men at El Alamein.

On left—
THE BRITISH MEMORIAL: A high cross, emblazoned with a sword, forms the monument to the 11,945 officers and men who fell in the Middle East and who have no known grave. It was unveiled by Lord Montgomery in 1954. The number of British and Commonwealth casualties during the fifteen days of the El Alamein battle was 13,500.

TURIN'S NEW SHAPES

The Forty-First Annual Motor Show

On the day the record-breaking Earls Court Motor Show closed—October 31—Signor Gronchi, the Italian President, opened the forty-first Turin Motor Show. This year a total of 490 exhibitors from twelve countries were taking part in the show, which closed on November 12. Among accessories, the main novelty was the Pirelli BS3 tyre with separate treads which can be removed and replaced with the minimum of trouble. Home-produced cars included a station wagon version of the Lancia Appia, third series. Maserati had on display a coupé capable of 167 m.p.h.; it has an 8-cylinder, 5-litre engine. Foreign cars which attracted considerable attention were the British Ford Anglia and the B.M.C. 850-c.c. baby saloons, while the American compact-cars—the Chrysler Valiant, the Ford Falcon, and the General Motors Convair—also aroused interest.

This year saw a new development in the price war between manufacturers from the European Common Market countries, with Taunus (German) Ford announcing an overall reduction in their prices. The struggle was begun last year by Fiat, who at the 1958 Show announced price cuts on all their models. They were expected to do the same this year, but at the time the exhibition opened there had been no announcement.

ON VIEW AT THE TURIN MOTOR SHOW: The experimental body of the Italian Ghia Selene is completely unorthodox in design. The steering-column carries two lever arms, reminiscent of aircraft controls, and, getting rid of the facia panel, the instruments are spread in a thin ribbon along the lower ledge of the windscreen. Switches for lights, windscreen-wipers, etc., are between the well-upholstered bucket seats.

A NEW ITALIAN SPORTS MODEL: The two-door, four-seater, hard-top car is the Super America, a new sports saloon manufactured by Ferrari, the famous Italian racing-car firm. The Super America is powered by a 4,900-c.c. engine and costs over £5,000.

AN AMERICAN EXHIBIT: The Fairlane Galaxie Ford has a 6-cylinder, 3,655-c.c. engine, developing 145 b.h.p. With its long, low lines, the Galaxie is also available with an 8-cylinder, 5,441-c.c. engine. The 6-cylinder version of the American car costs £2,400.

AN ADDITION TO THE FIAT RANGE: The Torpedo is a new version of the popular 600. Making its debut in Turin, the Torpedo was designed by Savio. Fiat, contrary to reports in the Italian Press, have not reduced their prices this year.

REVOLUTIONARY CAR BODY: It is the Ghia Selene (the car in the top picture), whose experimental design has attracted much attention. The car's interior, which is luxuriously appointed throughout, has face-to-face seating for the passengers in the spacious rear compartment.

RADIOISOTOPES: A PAYING NATIONALISED INDUSTRY

By "THE SPHERE" INDUSTRIAL CORRESPONDENT

MORE than once in recent years the United Kingdom Atomic Energy Authority has been described as "Britain's most successful nationalised industry." In terms of technical progress, this is entirely merited—though, in fact, its most solid achievement, the initial "take-off" from scratch of designing, building and bringing into commission its basic nuclear installations was largely completed while the organisation was a Government Department and before it was turned into a public corporation. But in commercial terms the praise must often have caused inside A.E.A. as much wry amusement as inside other nationalised industries it has caused mild irritation.

For commercially, the peculiarity of this newest and most glamorous of Britain's nationalised industries is that no outsider can know how successful or unsuccessful it has been: in more than five years of existence, it has never published any profit and loss accounts. The Authority is essentially a supplier of nuclear explosives and fuel elements, a centre of nuclear engineering technology, and a basic research organisation. This means that a large proportion of its "output" may almost defy valuation in commercial terms; but in any case, its operating accounts continue to be "withheld from publication in the interests of national security." It employs capital and current assets valued in its last balance sheet (this is published) at some £375,000,000, and it employs some 30,000 people; but it obtains the great majority of its disclosed annual income from "moneys provided by Parliament." In 1957-58 these amounted to some £95,000,000.

Atomic energy is not the only nationalised industry that has had to call upon the Exchequer to finance the "net cost" of its current operations; but few others do it regularly, and none has ever received any praise for doing so. The Transport Commission and the Coal Board, for example, might well jump at the chance to be called successful by recording only how much they have to get out of the Treasury each year and publishing no current accounts.

The truth of the matter is that A.E.A. is *sui generis*, a new kind of organisation created to carry out a new kind of technological function. To compare the greater part of its operations with those of the other public corporations set up to take over declining or monopolistic industries and services is really meaningless at the present time. There could come, perhaps, a period when the country would have built up what it considered sufficient stocks of nuclear explosive for defence purposes, and when A.E.A., as a heavily-capitalised research and development organisation, might obtain most of its current income from the manufacture and processing of nuclear fuels for industrial power and from the large amount of "consulting engineering" that will continue to be required in nuclear technology and which it alone at present is qualified to carry out. For the present, however, its main strictly "commercial" activity will probably remain one that it has carried out, largely outside the curtain of security, for quite a number of years already—the supply of radioactive isotopes.

This thriving business—which is, incidentally, part of A.E.A.'s most theoretical and nominally least commercial section, the Research Group with its headquarters at Harwell—has gone on since the earliest days of practical atomic energy development in Britain: production of isotopes began in Harwell's first experimental reactor, Gleep, in September 1947. Since then production and sales have gone on rising at the rate of about 12 per cent. per annum (which means doubling every six years). The Authority's last report put sales in 1958-59 at £800,000; about 60 per cent. of this was exported, and supplies were sent to fifty-five countries.

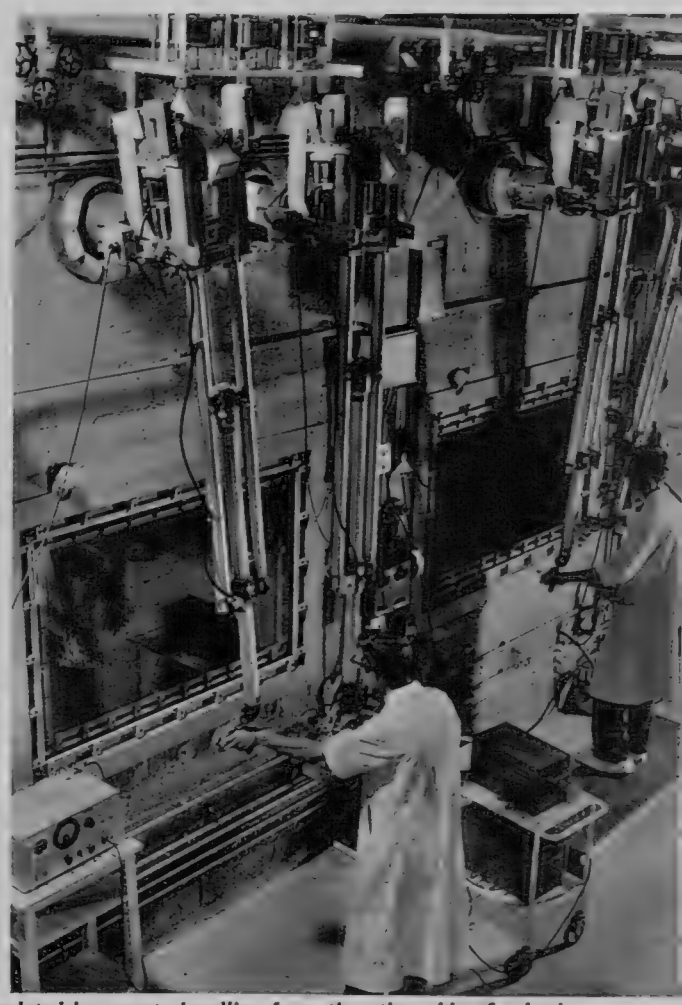
Originally, responsibility for the processing and distribution of radioisotopes was shared by Harwell and the Radiochemical Centre at Amersham, which was managed up to 1950 by a private firm, Thorium Limited. After 1950 Harwell became responsible for both centres; now the Radiochemical Centre has taken over the whole job of producing and marketing the radioactive substances, while research into their properties and possible new applications goes on in an Isotopes Research Division, mainly at Wantage, near Harwell.

Radioisotopes—which are essentially radioactive forms of ordinary elements, emitting radiation in the form of alpha or beta particles and gamma rays—can be produced in two ways in a nuclear reactor. If ordinary stable elements are placed in a reactor and bombarded with the neutron particles released in an atomic reaction, this "irradiation" converts ordinarily stable substances into unstable forms with properties akin to those of the naturally radioactive substances, such as uranium.

In addition, the process of fission of uranium that goes on inside a reactor steadily gives rise to a mixture of many isotopes of different elements in the fuel rods of the reactor. These "fission products," formed as the fuel rod "burns up," add to the difficulty of handling spent fuel rods, and have to be removed during the reprocessing of fuel for use over again in the reactor; but they offer comparatively large supplies of radioactive materials for use as sources of radiation.

The fast-moving particles or electro-magnetic waves that constitute ionising radiation penetrate matter and can affect the molecules or atoms of which it is made up; as a medical or industrial tool, therefore, radiation's great advantage is that it can be applied from outside without physical penetration of the material being worked. This radiation can make known the presence of minute amounts of radioactive substances; one can detect by radiation a trace of such an element a billion times smaller than could be detected chemically.

This is the property that has made possible a wide variety of "tracer" techniques in medicine and industry. The means to keep track of the flow of materials through a closed system—anything from blood in human circulation to oil or chemicals through a pipeline—can often be invaluable; radioactive trace elements make this simple, and by choice of materials in which the radioactivity dies away at an extremely fast rate one can arrange that no biological hazard remains in the system by the time one has fully traced the flow.



THE RADIOCHEMICAL CENTRE AT AMERSHAM: *Left*—Isotopes are manipulated by remote handling from the other side of a lead brick wall by means of a lead glass window. *Right*—The suite of hot caves is designed to handle up to a kilocurie of cæsium-137 or corresponding amounts of mixed fission products. It is being used to isolate the more important fission product isotopes and to produce cæsium-137 gamma-ray sources for industrial radiography and medical therapy units.

Most of the artificially radioactive elements so far supplied from nuclear reactors have been used, as the naturally radioactive ones were before them, for medical and other biological purposes. They are widely used in diagnosis—though not very generally in medical radiography—and, moreover, in treatment for the destruction of unhealthy tissue such as cancerous growths. Large "kilocurie" amounts of radio-cobalt, and more recently of radio-cæsium, which comes from fission products, are used in deep therapy.

Sterilisation by radioactivity is a technique that extends from the biological into the industrial sphere. A big unit is being built in Australia, for example, to sterilise wool fibres against anthrax, using cobalt supplied by A.E.A. Grain pests are not easy to destroy by radiation (they stand up to it a good deal better than human beings would), but they can be rendered sterile; this can be used to prevent further breeding or, indeed, to "swamp" existing populations of insects with large additional numbers of radioactively sterilised newcomers. Many kinds of food can be sterilised by these sources. Food can also be preserved over very long periods, remaining technically nourishing; for the moment, however, the irradiation tends to discolour it and kill the enzymes that give it taste, so that nobody in the food business is at present prepared to use the technique in commercial practice.

Industrially, the main use of radioactive sources continues to be in all kinds of non-destructive testing, in instruments such as thickness meters, and in the use of tracers for a wide variety of purposes. Some experts are pinning great hopes, however, upon the effects that radiation, as a source of energy which can be introduced easily from outside, can offer in chemical reactions. Certain plastics, such as polythene, can have their properties altered by irradiation; mechanical strength, electrical properties, and heat resistance can be produced.

Not all of these properties are equally commercially desirable; the result of radiation upon metals, for example, seems usually to be deterioration of their crystalline structure. But in polymerisation, the formation of large "chain" or branched molecules, radiation is offering some highly desirable properties. It becomes possible to "graft" new polymers on to the molecular structure of synthetic fibres; for instance, conductive films, which reduce the "static" electrical properties that can make dust cling to fibres such as nylon and terylene, can be applied in a way that no laundering can remove.

Development of radiochemistry is in no sense an irrelevant sideline among A.E.A.'s activities. It is true that it might never have developed on its present scale had not the atomic reactors been built to make explosive for nuclear bombs: the same, almost certainly, can be said of nuclear electricity, which would hardly be called a sideline now. But it offers perhaps the main opportunity for nuclear technology, in the future, to spread beyond the various forms of energy production and prime movers; and if it can be developed on a large scale, it should help to solve one of the major problems of practical nuclear power generation. Disposal of the growing quantities of fission products that will come as the number of reactors in operation multiplies will be one of the headaches that the Atomic Energy Authority will share with the nationalised electricity authorities.

The opportunity of developing radiochemical plants on sites near the reactors, which could make use of radiation from much of those waste products while they are being "cooled" on the site, could make a difference to the still uncertain economics of atomic energy.

On right—

AN UNDERSEA PIPE-LINE

A 6,000-ft., 2,000-ton sea pipe-line, claimed to be the heaviest in the world, was recently laid in Ga Lagoon, in the Gulf of Guinea, Ghana. The pipe forms a sewer outfall from Tema to a point sufficiently far out to sea to avoid all danger of beach contamination. The picture is a view looking inland along the pipe-line before laying was completed. On top of the pipe are buoyancy tanks and beneath it the launching units. Work on the project was begun last April, some 150 Ghanaian, British and American workers being employed. The contract placed by the Ghana Government Tema Development Corporation was worth about £500,000. The consulting engineers were D. Balfour and Sons, of London. The pipe, which is 27 ft. in diameter, consists of 210 short lengths welded together and was supplied by Stewarts and Lloyds Ltd. Each length was coated with successive anti-corrosion layers of enamel, glass fibre and bitumen, and surmounted by a 6-in. coat of reinforced concrete. The inside of the pipe was coated with a bitumen-sealed layer of cement mortar applied mechanically by Mowlem Centrilene Ltd., who used a machine travelling along the pipe interior. The contractors for laying the pipe were Taylor Woodrow (Ghana) Ltd., in association with Collins Submarine Pipelines Overseas.

DRIVING IN A NEW TYPE OF PILE

The "Delta" pile, which was developed in Switzerland and whose use on the Continent is spreading rapidly, has been introduced into the British Isles by H.D. Foundations Ltd., a subsidiary of the Holloway Group of Companies. Basically, the pile consists of an extending tube and a ram which operates inside it. The tube is driven into the ground and concrete is inserted into it. To form a bulb at the bottom of the pile the concrete is pushed out by the ram while the tube is slightly withdrawn. To make the main length of the pile more concrete is added and the tube slowly withdrawn with the ram resting on top of the concrete. Different lengths and diameters of piles can be made. Illustrated is a team in the final stages of pile construction for oil storage tanks and a boiler house at the Wandsworth depot of Shell-Mex and BP Ltd. The bulb has been formed and the tube is being slowly withdrawn.

MOVING COAL AT DRAKELOW

On left—

The Central Electricity Generating Board are planning to make the Drakelow Power project near Burton-on-Trent the largest steam power station group project in Europe. The ultimate capacity of its three stations will be 2,200 megawatts. Employed at Drakelow are two Michigan tractor shovels; the first, a 175A model with a capacity of 5 cubic yards in its bucket, was purchased last year and the second, recently acquired, is a 275A model (seen at work in the picture) with a capacity of 8 cubic yards. They supplement the old transporter and belt conveyor system in moving coal. Travelling at maximum speeds of 27 m.p.h., the two tractor shovels move coal at a rate of over 600 tons per hour.

DOWN THE CHUTE, INTO REVOLVING REFUSE BINS

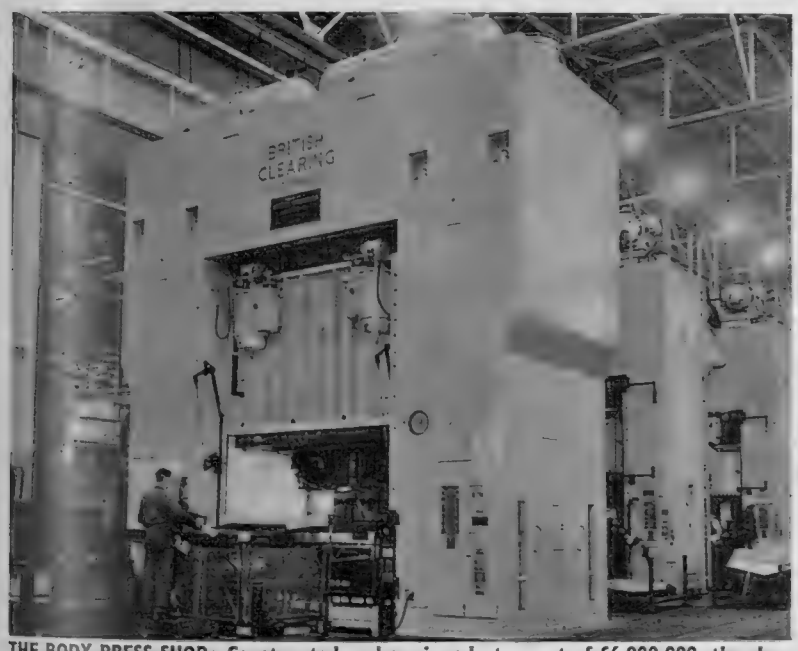
To simplify and cheapen the disposal of refuse from tall, new blocks of council flats, the London County Council has designed a "refuse roundabout." The apparatus consists of a circular framework of welded steel designed to hold four or six refuse containers which pass in turn under a refuse chute. The chute leads from the top storey down to the bins in the basement and refuse is simply placed in the chute and slides straight down to the containers. When a bin becomes full it requires only one man to revolve the next one into place. The bins are positioned well clear of the floor so that they may be easily wheeled away on trolleys to be emptied. In the picture a roundabout with six bins in position is seen from above.

FORD'S NEW PAINT, TRIM AND ASSEMBLY PLANT AT DAGENHAM: It forms the largest single project in the Company's £75,000,000 expansion programme. The conveyor bridge, foreground, carries unpainted body shells from the body plant.

FORD'S MODERNISATION

Now coming into full operation, the new paint, trim and assembly plant of the Ford Motor Company Ltd., at Dagenham, covers over 85,000 square yards. The £10,000,000 structure represents the culmination of the Company's £75,000,000, five-year programme of modernisation and expansion which was launched in 1954. From the beginning at Dagenham, bodies were painted and furnished at the body plant and then, for final assembly, conveyed by road to the main plant about 1½ miles away. In the new building it was planned that all the body processing and final assembly operations should be adjacent so that the work could flow smoothly. G. Percy Trentham Ltd., the main contractors, started construction in June, 1956.

To-day the painting, trimming and final assembly are carried out in one two-storey building 1,215 ft. long and 630 ft. wide. This is linked to the body-making plant by a conveyor bridge, spanning Kent Avenue and 725 ft. long. Inside it, temperature and humidity are kept constant to prevent oxidisation of the body shells. The conveyor system used to move the shells is entirely automatic and has a total length of 9 miles. Well over 1,000 bodies in various stages of paint and trim may be carried in the system at any one time. At the new plant, the top floor constitutes the paint shop, where each shell receives six coats of paint. The shells are then lowered to the trim lines on the ground floor, where after various processes and inspections they pass into storage, before reaching the final assembly lines.



THE BODY PRESS SHOP: Constructed and equipped at a cost of £6,000,000, the shop houses twelve lines of presses arranged in tandem to allow a smooth flow and the maximum amount of automation. In all there are forty-nine presses.

MIXING PAINT: Drums and piping present a complex scene in one of the two central mixing rooms of the paint circulating system. Paint is supplied to over 600 spray guns through an intricate pipe system.

VARIOUS PROCESSES: *Left*—All the variable speed couplings for the 175 conveyors were supplied by Heenan and Froude Ltd., of Worcester. *Centre*—A body shell is sprayed inside one of the primer spray booths in the new paint shop. The sequence of booths and ovens extends for well over a mile. *Right*—On the ground floor of the plant the painted body shells are upholstered and fully equipped on a series of parallel conveyors, linked by cross conveyors.

THE FIRST ANNIVERSARY OF THE POPE'S CORONATION

Solemn Mass is Celebrated in St. Peter's, Rome

OUTSIDE THE VATICAN: The Pope leaves the church of St. Charles in Rome. On his left is Mgr. Dante, Papal Chamberlain. The visit was made on the eve of the feast day of St. Charles Borromeo.

THE FIRST ANNIVERSARY OF THE POPE'S CORONATION: Cardinal Montini, Archbishop of Milan, officiates at Solemn Mass in St. Peter's, Rome. This formed part of the ceremonies held to mark the anniversary.

On November 4, in St. Peter's, Rome, Solemn Mass was attended by Pope John XXIII to commemorate the first anniversary of his Coronation. Also present were thirty-one Cardinals of the Roman Catholic Church, Bishops, and members of the Diplomatic Corps. It was estimated that some 20,000 people attended the Mass, which was celebrated by Cardinal Montini, Archbishop of Milan.

During the first year of his reign, Pope John XXIII has broken more than one precedent. In his role as pastor he visited, shortly after his Coronation, the Regina Coeli Prison in Rome, and on the same day went to two hospitals, where he chatted with invalids, blind persons and sick people. He has appealed for a "fairer redistribution of wealth" to help the many impoverished people of Italy. As a statesman, Pope John has expressed great concern over Roman Catholic priests working in Communist countries. In elections for regional Parliaments in Val d'Aosta and Sicily, the Roman Catholic Church openly intervened through the decree of March 25 which forbade Roman Catholics to vote for any candidate who co-operated *de facto* with the Communists or supported them by his actions.

Perhaps the most important action so far of the Pontificate was the announcement of the intention to convene an Œcumenical Council to study various subjects and questions of dogma. Only twenty Œcumenical Councils have been held, the last in 1870.

On left—

CELEBRATING THE ANNIVERSARY: Pope John XXIII stands in front of the Papal throne in St. Peter's during the ceremonies held on the first anniversary of his Coronation. To the left of the Pope are Cardinal Canali, the senior Cardinal Deacon, and Don Aspreno Colonna, Prince Assistant at the Throne. Cardinal Ottaviani is to the right of the Pope. On each side of the throne are held flabelli, fans of ostrich feathers. Foreground, members of the Noble Guard stand to attention.

Above—

INSIDE ST. PETER'S: From his gestatorial chair, the Pope, who is wearing the triple tiara, blesses the people. He is being carried past the Baldacchino, the four gilt bronze spiral columns of which support a canopy over the High Altar. At least 20,000 people were estimated to have attended the Mass. Thirty-one Cardinals, a number of Bishops and representatives of the Diplomatic Corps to the Vatican were present.

The World of Books

A TRIBUTE TO DELIUS

A Biography of the Composer by Sir Thomas Beecham; the 5th Duc de Richelieu; a Doctor's Memories; History of the Boer War; the "Andrea Doria" Disaster; and Recent Fiction

TO find a composer and an interpreter closely identified with each other is one of the rarest things in the world of music, however likely a combination it would seem to an outsider. In the case of Delius and Sir Thomas Beecham it was a situation which grew naturally to a near-perfection of understanding and we find one of the reasons for that in Sir Thomas' very fine biography of his old friend. It is now nearly forty years since the great conductor, dissatisfied with nearly all the existing printed versions of Delius' music, began the task of re-editing them and created what was virtually a private edition of the works. On this Sir Thomas has based his interpretations, with what magical results all music lovers know. FREDERICK DELIUS (Hutchinson. 30s.) has been written in fulfilment of a "conditional promise" to Jelka, the wife of the composer, who was to die soon after her husband's death in 1934. As a biography it can be said to have the essential qualities of authority, clarity and objectivity, but there is far more to it than that. Here is a man who is not only writing about a close friend whom for the most part he admired and invariably understood, but writing from the standpoint of a considerable musician in his own right and the man who had done everything for the music of Delius except write it himself. For it was through Sir Thomas that the public in this country, at least, first came to know, and eventually to be familiar with, the composer's output.

In later life Delius was to suffer the terrible misfortune of blindness and almost total paralysis, catastrophic blows to which he reacted with immense courage, and it was during what Sir Thomas calls the final chapter of his life that providence sent to him a young man who by his devoted and almost unbelievable work made it possible for Delius to compose and put together a full orchestral score comprising as many as thirty separate instrumental parts. Surely this was the strangest, and the most impressive chapter of all, in a life which has been set down with nobility, with insight and, because the author is who he is, with a dazzling play of wit.

When Talleyrand fell with Napoleon his successor was appointed but received the news of the honour without enthusiasm. His personal position was unassailable, as fifth Duc de Richelieu, and the work on which he was then engaged, the Governor-Generalship of what was known as New Russia in the south, was both absorbing and successful. He returned, nevertheless, to France and, in TALLEYRAND'S SUCCESSOR (Arthur Barker. 25s.), Cynthia Cox has written of his career in those immensely difficult years when the peace settlement was being worked out and when he became a figure of prestige both with Wellington and the Tsar. To his own people he was something less than this in spite of his disinterested patriotism and his gifts of statesmanship. This is an exceptionally interesting study of a period not over-rich in memoirs and has been written with a fine economy and simplicity. Cynthia Cox, in closing, quotes the most fitting epitaph for this remarkable man. "Alone among members of the royal family in expressing regret at Richelieu's death, the Duc d'Angoulême had both the courage and the honesty to say of him: 'He did not like us but he loved France.'"

Dr. D. G. Halsted is a spry old gentleman of ninety-four whose autobiography, DOCTOR IN THE NINETIES (Christopher Johnson. 18s.), has a very neat, two-way significance. It was in the '90's that he worked as a medical student and young doctor in Whitechapel, and won the friendship of his contemporary, Wilfred Grenfell. And it is in the nineties that he now writes: "I am so old that I could tell a pack of lies without fear of contradiction, for none of my contemporaries has survived to refute me. But I have firmly resisted this temptation." In resisting it, I may add, the doctor has given us a highly entertaining and by no means old-fashioned piece of reading.

I remember being told by a veteran of the Boer War that the sound of "Goodbye, Dolly Gray" being played on the dock at Cape Town was the most poignant and haunting that he had ever experienced and so it seems to me a natural and fitting title for Mr. Rayne Kruger to have chosen for his story of the Boer War. To consider in the round a war as controversial as this one is an ambitious project, but it seems that, from one point of view at least, Mr. Kruger is in a good position to undertake it. Born and brought up in South Africa and with a family relationship to "Oom Paul," he has lived in England since he returned from war service with the Merchant Navy and therefore can be said to have a minimum of bias. Mr. Kruger decided to embark on the writing of this massive volume—GOODBYE DOLLY GRAY (Cassell. 30s.) is well over 500 pages long—because he could find no history of the war that satisfied him and he has evidently brought great powers of application, of orderly thinking and of expression to his task. He has also assembled a great number of masterly illustrations. His history of the Boer War may not be the definitive one, but it is certainly one of the most readable up to date. In any case, perhaps a definitive history is not what we want. So controversial a subject should produce showers of sparks for another six decades at least.

CUTTING A SPETTECAKE: Mrs. Edith Unnerstad, the distinguished Swedish writer of children's books, is seen with a fine example of the Swedish batter cake at a party in London at the National Book League. This was given by her publishers, Michael Joseph Ltd., on the publication of Mrs. Unnerstad's book *The Spettecake Holiday*. Born of Swedish parents in Finland, the authoress has lived in Sweden since she was ten. She is a novelist as well as a children's writer and has published a volume of poetry. Her books have appeared in many European countries and the U.S.A. and have been honoured with several awards. *The Spettecake Holiday* (published at 12/6) tells of a small boy's visit to his grandmother's farm.

It was a calm night in high summer three years ago when a big Italian liner was nearing New York at the end of her Atlantic run and a big Swedish one on her way back to Europe was also nearing the Nantucket Lightship. One ship was in fog, the other had fair visibility. Both ships were equipped with radar. Nevertheless, the *Andrea Doria* and the *Stockholm* collided and, indeed, narrowly escaped colliding again as the Swedish liner backed away leaving the Italian one to sink some hours later. Mr. Alvin Moscow's COLLISION COURSE (Longmans. 18s.) is a reconstruction of one of the most extraordinary sea disasters of our time which is still not entirely elucidated. The present book, however, goes further towards this than any previous publication.

First of this week's small batch of novels is an American one by Mr. Howard Singer. WAKE ME WHEN IT'S OVER! (Gollancz. 15s.) made me laugh and I hope will make you laugh, too. It opens, rather forbiddingly, I thought, with the activities of an ex-airman being threatened with a call-up notice and there seemed to be a danger that the whole story would degenerate into one of those comedies, so un-comic to English eyes, about draft-dodging. But Mr. Singer is a good deal better than this and his invention is admirably rich and varied. His un-heroic hero gets drafted indeed and ends up on a singularly unsalubrious island somewhere between Japan and the Korean coast. To all intents and purposes a dead end, and a rather smelly one at that, the place is transformed within months to a money-spinning hive of activity, with the G.I.s as happy as the night is long and the top brass queueing up to join in the fun. Disaster strikes, as was to be expected, but even disaster can be transmuted into something good. Anyway, it 's all very funny and that is the best thing I can say in its praise.

TOMORROW IS NOW (Neville Spearman. 15s.) may be in the modern idiom of political tension, jive talk and delinquency, and as such a sign and portent of the times but I, nevertheless, found it an extremely disjointed novel to read and one so melancholy in its conclusions that I think I shall remember it chiefly for the uneasy shadow it cast. Mr. Ernest Borneman is a Canadian writer but the scene is London and the protagonists a family who are half-American, half-English and wholly unreconciled to the business of getting on with each other. There are ideas here, but only the thinnest sliver of hope.

THE TROUBLE AT SHAPLINCH (Hutchinson. 15s.) is Mr. David Emerson's novel of an English country parish about 130 years ago, when some of the problems seemed smaller and all of them, except the ordinary humanities, had a different application. Mr. Emerson has written this neat and evocative story on a domestic or, at the widest, a parochial theme, and has been outstandingly successful in conveying the moods, the customs and the manners of those far-off days when emotions may have been the same but when they were expressed so very differently.

Finally, three detective stories with which to regale you, beginning with Miss Agatha Christie's latest, CAT AMONG THE PIGEONS (Collins. 12s. 6d.). This is Miss Christie's best for several years and praise could scarcely be higher than that. The setting is a fashionable school for girls somewhere in England, the kind of

CHINESE—EUROPEAN RELATIONS

The Story of Sai-chin-hua and the Boxer Rebellion

In Soochow, in the Yangtse Valley of China, the newspapers one day in December, 1936, carried the story that the death had occurred in the utmost poverty in the most sordid quarter of Pekin, not far from the Bridge of Heaven, of Sai-chin-hua, the last survivor in one of the strangest episodes in the history of Chinese-European relations. But the rest of the world was preoccupied with other matters and the legend of Sai-chin-hua had to wait. Henry McAleavy has now translated into English the story of this remarkable personality in a book which is given the somewhat derogatory title THAT CHINESE WOMAN (Allen and Unwin. 18s.). The truth about Sai-chin-hua was that this granddaughter of a Soochow pawnbroker had beauty, character and ability, allied to a roving eye and a loving heart. When the moment came to help her country she had the wisdom and the courage to act.

At an early age Sai-chin-hua was inveigled aboard the Soochow flower-boats of ill fame; her character and striking good looks rescued her from a life of prostitution, however, and she married a scholar who became Chinese Ambassador to Germany and Russia; by all accounts she was a very good diplomat's wife to a somewhat indifferent diplomat, mastering the German language and making herself highly popular at the Kaiser's court. It was in the Tiergarten in Berlin that Sai-chin-hua met the handsome Prussian officer, Count Alfred Waldersee, clearly establishing a close liaison with him, much to the disgust of her husband's valet who had the same ideas. Later the scene shifts to China and the period of the Boxer Rebellion at the turn of the century, when Field Marshal Waldersee became C.-in-C. of the Allied forces, at the same time renewing his acquaintance with his ex-mistress, now a widow, and setting her up in the Royal Palace at Pekin. There they jointly decided the fortunes of China in its post-rebellion year.

The author goes on to describe Sai-chin-hua's subsequent fall from grace, but over her decline through the years he draws a veil, and we are left to remember her for her generosity at the height of her power and her good sense in guiding Waldersee in his judgments at a time when the Germans were calling on the Field Marshal to behave like a second Attila. Mr. McAleavy's translation is based on a view of Sai-chin-hua that stems in part from her own evidence, but on every page the book reveals an intimate acquaintance with official Chinese circles, and it is certainly not to be set aside lightly on any grounds, least of all its readability.

Many folk have written books about their travels when they have spent only a few weeks or months in the country they attempt to describe, but Alex Atkinson has gone one better. His U.S.A. FOR BEGINNERS (Perpetua Books. 21s.) acknowledges the fact that he has never been to America at all, and he has the drawings of the redoubtable Ronald Searle in aiding and abetting him in presenting this wealth of "unreliable but hilarious information." Mr. Atkinson has certainly caught the exhilaration, the thrust, the fever of modern America, and he pinpoints the situation when he declares "you frequently find yourself half-way through to-morrow's schedule before you have digested yesterday's tranquilliser."

Edith Sitwell has made her personal choice of the best poetry in the English language from the pre-Chaucerian lyrics to the British and American poets of the '50's, and gathered it within the covers of the two volumes, THE ATLANTIC BOOK OF BRITISH AND AMERICAN POETRY (Gollancz. 3 gns.). A number of eighteenth-century and Victorian poems have been discarded to make way for modern verse and, in accordance with modern predilections, metaphysica

UNWILLINGLY TO SCHOOL

In my own schooldays, which began in the late '90's, public and private schoolboys were reticent about the uglier and harsher experiences they met with, and bullying was on the wane. My father sometimes told me of the tortures inflicted on small boys at Harrow when he was there in the early '60's. If the careful collection of records and anecdotes assembled by Mr. G. F. Lamb in THE HAPPIEST DAYS (Michael Joseph. 18s.) were not exaggerated by the recorders, it is fair to say that, up to 1880, to be young and at a boarding-school was very Hell. It is probably true that as mass-brutality declined (and boys in mass always held the palm for insensate brutality), so did gentler vices grow. A headmaster says that nowadays boys are ready to talk freely to anybody about sex-matters. It may be so; they do not choose me as confidant. But this I say with conviction: little understood, wholly unexplained, the natural urges of sex came upon them in their "monasteries" and they had their love affairs—even the most normal boys—and these affairs were usually sentimental idealism and often more touching and poignant than the first "despised love" affair with a débutante which followed school days. For such a boy to have been branded as a criminal, when exposed, was as unjust and unrealistic as it is to touch on this subject under the heading of "homosexual practices." In a school-book, it is better left out or given a long and sympathetic chapter, which it deserves. For the rest, the author is understanding and authoritative (subject to the magnifications of most horror-stories which time brings and which are beyond his correction to-day).

He writes with a fine sense of humour and pith. But small wonder if some Cecils and Sitwells, Trollope, Lewis Carroll and Flecker, did not look back on their schooldays as the happiest of their lives! Neither did I, though I was a fairly successful athlete. None the less, the subject deeply interests me still and I could have done with much more of this entertaining and instructive book, for I have never been an assiduously faithful Old Boy and kept myself up to date. **John Gore.**

(*Continued from previous page*)

seminary which takes sultan's daughters and other heiresses as smoothly in its stride as more Kensingtonian types and the action is far less polite than one might expect and twice as violent.

EASY PREY (Hodder and Stoughton. 12s. 6d.) is by Miss Josephine Bell and is an exercise in the art of telling a thoroughly creepy story against a thoroughly suburban background. Full marks for trying and credit marks, at the least, for doing it as well as it has been done.

MISS PINKERTON (Cassell. 18s.) is a satisfyingly big omnibus containing two novels and two long short stories (if you see what I mean) by the late Mary Roberts Rinehart, who may never be bettered in her own field. All four tales are concerned with the exploits of an attractive trained nurse with detective tendencies, who is called in to deal with especially tricky cases when the local police chief feels that her womanly touch is needed. Vastly entertaining and with a typical quota of thrills.

Vernon Fane

poems. One of the casualties in this personal reappraisal has been Samuel Johnson, whose two major poems deserve a place in every comprehensive anthology. Throughout the two volumes are some thirty-four prose prefaces in which points of appreciation and criticism are brought to the reader's notice.

Noel Streatfeild and that skilled photographer Gabor Denes have combined to produce a delightful volume on THE ROYAL BALLET SCHOOL (Collins. 18s.). The Royal Ballet was founded by Dame Ninette de Valois in 1931 as the Sadler's Wells Ballet, and the school was set up at the same time to train young recruits. Miss Streatfeild describes the modest beginnings of the school, and also the present institution operating in two sections, one for the younger boarders at White Lodge, Richmond Park, and the other for the older pupils in Colet Gardens, Hammersmith. The author's own personal enthusiasm for the ballet is reflected in these pages.

Paul Gallico's THE HURRICANE STORY (Michael Joseph. 12s. 6d.) is a glowing tribute to the great fighter-plane which bestrode the skies in the first years of World War II, defying Hitler's aerial might above the fields of England and France. Summing up, Mr. Gallico declares, "she was loved and trusted by every man who ever knew her. She had no vices. In the hands of the young men who mastered her and became her lovers she saved England and all that rest of the world that cherished the right of freedom."

Richard Waddington is a profound and sometimes controversial writer on angling matters. SALMON FISHING: PHILOSOPHY AND PRACTICE (Faber and Faber. 42s.) is a complete treatise on the art of catching salmon with a fly, full of the wisdom that comes with experience. The chapters on strategy are particularly fascinating. The author has included some really excellent photographs in the text. **R. C. E.**

THE MISFORTUNES OF CINDERELLA: In the production of Rossini's opera *La Cenerentola* at Sadler's Wells, in London, the heroine is sung by Patricia Kern (centre). Left is Clorinda (Nancy Creighton) and seated on the right is Thisbe (Anna Pollak). The company uses an enjoyable English translation by Arthur Jacobs and the production has been accorded an enthusiastic reception. Rossini's opera for long has been regarded as a difficult work for a repertory company, since it requires the heroine to be a contralto or mezzo-soprano coloratura. But the vocal requirements of the part have not prohibited Patricia Kern from making a charming Cinderella. Her debonair Prince is sung by Alexander Young, Dandini by Denis Dowling, and Alidoro by Stanley Clarkson. The conductor is Bryan Balkwill.

OPERA IN LONDON

On left—

JEALOUSY IN THE FAMILY: Don Magnifico (Howell Glynne) and his ugly daughters, Clorinda (left) and Thisbe, are furious when they find Cinderella has been chosen as the Prince's bride.

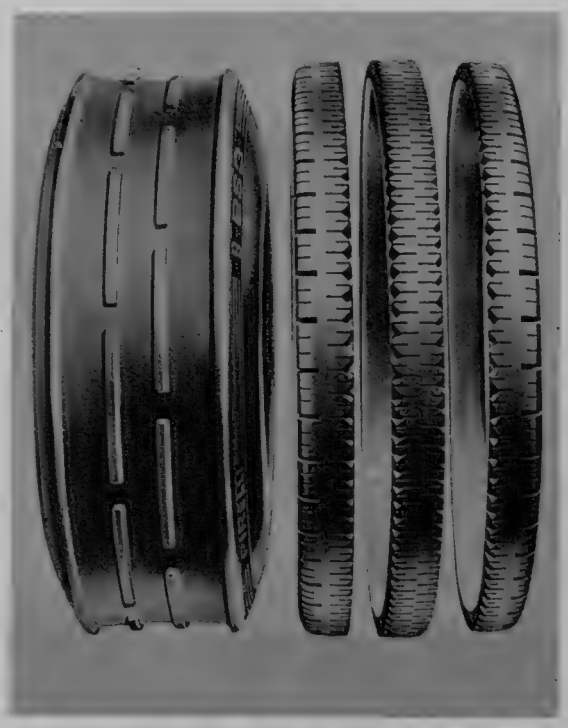
AN OPERA IN RUSSIAN: Boris Christoff sings the title-role in Moussorgsky's opera *Boris Godunov* at the Royal Opera House, Covent Garden. The work is being performed in a shortened version, in three acts, of last year's production, omitting Marina's scene at the start of Act 3. The conductor is Jaroslav Krombholc, appearing in Britain for the first time.

NEW VERSIONS OF TYRES AND CARS

Detachable Treads; A Transformed French "Ugly Duckling"; The Last "Compact" Car; Developments to British Sports Cars; Gold Medals for Coachwork; Other Motoring News

By "THE SPHERE" MOTORING CORRESPONDENT

THE most important development in tyre design for many years was announced just before the close of London's Motor Show, not at the Show itself but at a Savoy Hotel lunch given by Italy's Pirelli Company. At this lunch the world was given first news of their BS3 tyre, which has treads that are removable and replaceable without special tools. This revolutionary new tyre was placed on public show for the first time the following day at the Turin Motor Show. It has three tread bands which fit in grooves running round the periphery of the casing. The tread bands are reinforced by steel. Motorists can remove them either when they wear out or when they wish to use a bolder tread for winter motoring. If the tyre, through bad alignment or some other cause, wears more quickly on one side than the other, the outer and inner bands can be changed over. The cost of a tread band is only about 12 per cent. of that of the complete tyre and Pirelli claim that the casing itself will outlast a number of tread replacements. The price of the BS3, including its three tread bands, is about the same as that of an ordinary tyre. It is a simple matter to anchor steel studs under the tread bands for driving on icy roads.



A NEW KIND OF TYRE: On the left is the casing of the Pirelli BS3, and on the right its three treads of standard pattern. The tyre was announced just before the opening of the Turin Motor Show. The treads can be fitted without special tools or equipment. Treads of a different kind are available for winter motoring and to these ice studs can be fitted when required. Worn treads can be replaced without renewing the casing, which, it is claimed, will outlast several treads. The price of the Pirelli BS3 is about the same as that of a tyre of standard design.

The new Citroen Bijou, surprise announcement at the London Show, is in effect the "ugly duckling" 2 c.v. Citroen beloved of French farmers, with a smart new plastic overcoat. It will be assembled at the Citroen plant at Slough, Bucks, mainly from parts sent over from Paris, but as many British-built components and fittings will be used as possible, to escape the 30 per cent. duty. The shapely plastic coachwork will be made in Britain, and as satisfactory mass-production methods have not yet been evolved for this type of body, it does not look as if Citroen are aiming at a very high production rate. This four-seater saloon with front-wheel drive, independent suspension all round and an air-cooled, flat twin four-stroke engine of 425 c.c. will cost £674, including tax. Here, for purposes of comparison, are the all-in prices of typical small British cars: Austin Seven and Morris Mini-Minor, £497; Ford Popular, £494; Austin A.40, £639; Ford Anglia, £589; Morris Minor, £590; Hillman Husky, £660.

With the arrival of the Chrysler Corporation's new Plymouth Valiant at Earls Court the London Motor Show, half-way through its run, became the first automobile exhibition to display simultaneously all three of America's new "compact" cars. We had already seen the Ford Falcon and Chevrolet Corvair at the Paris Salon. The Valiant, as was expected, turned out to be the biggest of the three in engine size, with a cubic capacity of 2.8 litres. A four-door six-seater, with a claimed top speed of 100 m.p.h., it has a 6-cylinder in-line engine tilted at an angle of 30 degs. to reduce bonnet height. With its new Valiant, as with all its 1960 models, the Chrysler organisation has abandoned the use of a separate chassis frame and has switched to the European unitary construction method.

Mr. Alfred Owen, head of the great Rubery-Owen engineering empire, but better known as the man who rescued the B.R.M. racing car from potential ignominy, went along to Earls Court during the Show to announce that he has given Mr. Donald Healey the world rights for the distribution of his Shorrock supercharger to B.M.C. dealers. Mr. Healey is the Cornishman who designed the Healey sports cars now being built by the British Motor Corporation: the Austin Healey-3000 and the Austin Healey-Sprite. The latter is powered by the B.M.C. "A"-series engine of 948-c.c. as fitted to the A.40 and Morris Minor, and the little car that lives up to its name so handsomely is now available with a Shorrock supercharger for £75 extra. This means a 96 m.p.h. car for £706, including tax. The supercharger was designed by Mr. Chris Shorrock, who made most of the blowers fitted to the late Colonel Goldie Gardner's M.G. record-breakers. In accelerating from zero to 50 m.p.h. in just over eight seconds the blown Sprite clips more than five seconds off the performance of the standard model.

From sprightly motoring to something more utilitarian. . . . You can now get the four-speed, 1,670-c.c. Standard Ensign saloon with the new little Perkins diesel 4-cylinder engine of 1.6 litres. It came as a bit of a shock to be told by Perkins that the Ensign is the only compression-ignition model currently on offer by a British car firm. But the fact is that although diesel cars are economical and reliable and need less maintenance than a petrol-engined car, the loud metallic pinking noise given off by these units has not yet proved acceptable to the private motorist. Personally, I think this small Perkins diesel has a much greater future in light vans, though I am one of those who shudder at the thought of more black diesel smoke polluting the English atmosphere. When I say this, I am not concerned with the question of whether diesel fumes are more injurious to health than petrol exhaust, though that is, of course, a matter of vital importance. So many diesel-engined vehicles on Britain's roads are badly driven or badly maintained, and the clouds of black smoke they emit, especially on hills, are rapidly becoming one of our major social evils—as well as causing a great deal of extra danger.

Now let us continue with something more pleasant: the four-seater saloon version of the 2½-litre, V-8 Daimler sports two-seater which created so much interest at the Show on the Hooper stand. The four-seater was another last-minute surprise and, I suspect, is more in the nature of a design exercise to test public reaction than a serious production project. I sat in the back seat and, quite frankly, I would not like to have to travel very far in it. In common with many close-coupled four-seaters evolved from two-seater models, it offers only limited leg and head room. I liked the car's sharp styling, though the pointed headlamp hoods struck me as rather dangerous and not likely to be acceptable in France, where they have quite properly become a little fussy about such protrusions. If Daimlers can produce this four-seater for the price suggested—£1,600 including tax—it will have a big sale.

Imperial Chemical Industries made their usual survey of the car colours at Earls Court and came out with the verdict, plain for all to see, that they are bolder and gayer this year. "Stronger colours generally, and reds in particular, have come back into favour," says the I.C.I. report, "after several years in which pastel shades have predominated. Although single colours have gained in favour, duotone schemes are still widely used. . . . Black, for many years of negligible significance, has declined still further and represents only 2 per cent. of total exhibits, green has gained ground at the expense of blue, and grey has dropped from 19 per cent. to 11 per cent."

Congratulations to the makers of the fifteen Show models awarded gold medals in the annual coachwork competition organised by the Institute of British Carriage and Automobile Manufacturers. Makers of special coachwork who get gold medals include Park Ward (for their Rolls-Royce Phanton V limousine and Bentley Continental) and H. J. Mulliner (Bentley Continental "Flying Spur"). The Rootes Group collected three medals for their Sunbeam Alpine sports two-seater, Sunbeam Rapier saloon and Humber Super Snipe estate car. Among the lower-priced cars honoured are the Ford Anglia (with its reverse-angle rear window), Michelotti-styled Triumph Herald coupé, the Vignale-tailored Standard Vanguard and the new estate car version of the Austin A.40. Other gold medallists are the Wolseley 6/99, 2.4-litre Jaguar Mark 2, Rover 3-litre, Vanden Plas Princess and the Bristol 406 saloon.

Mr. David Brown, to the regret of many, has announced his withdrawal from sports-car racing. He says the cars needed to win races (and he himself won the world championship this year with his Aston Martins) are getting too far removed in cost and specification from the production cars the public wants to buy. One such is his own *gran turismo* version of the DB24, which Reg Parnell recently accelerated to 100 m.p.h. from zero on the high-speed track at Lindley, Nuneaton, and braked to a standstill again—in twenty seconds. Girling disc brakes helped. . . .

Up to the end of August new car registrations in Britain this year totalled 418,698. This is a record for the first eight months of the year and more than in the whole of 1956. It won't be long before 5,000,000 cars will be using Britain's roads. . . .

Welcome news for the car chiefs during the Show: car production and exports for September (121,740 and 38,513) were all-time records for the year's ninth month. . . .

The British Radio Equipment Manufacturers' Association put out a Show-time estimate that there are now 400,000 cars in Britain fitted with radio. Estimated output this year is 250,000 (50,000 more than the 1958 total). . . .

On the eve of the opening of the £16,000,000 72-mile London-Birmingham Motorway (the best thing that has happened to British motorists for a long, long time) Mr. Ernest Marples, new Transport Minister, gave these motorway driving hints: (1) Maintain a steady speed; (2) Observe strict lane discipline; (3) Take care when overtaking and get back to your own lane smartly. I myself would emphasise the need for very frequent glances in the driving mirror.

BRITAIN'S FIRST MAJOR MOTORWAY IS OPENED: On a bridge over the London-Birmingham Motorway just south of Luton Mr. Ernest Marples, the Minister of Transport (pointing, in a dark suit), is among a crowd of spectators. He had just inaugurated the 72-mile stretch of dual-carriageway, which has been named the M.1.

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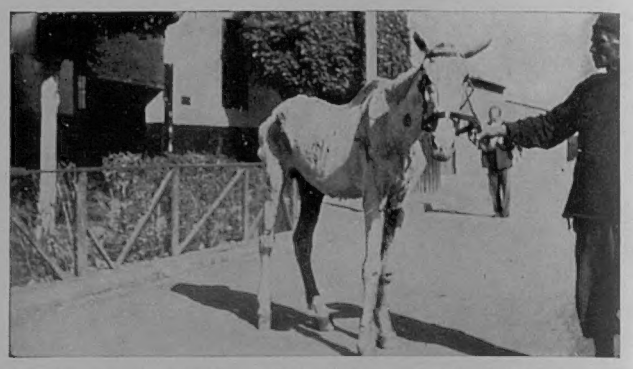

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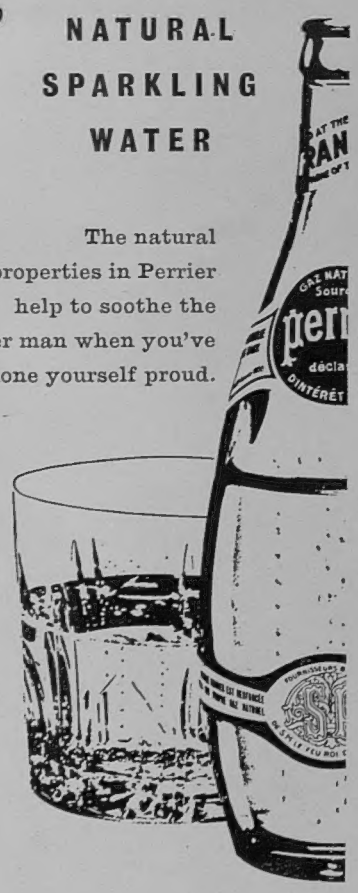

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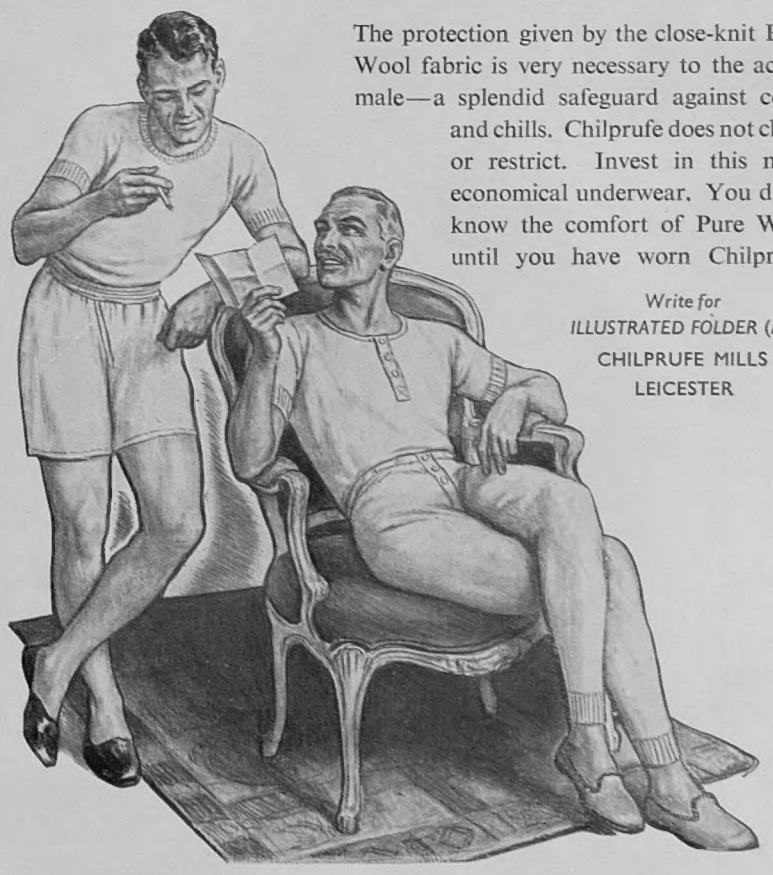

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